November 1961

BUSINESS AUTOMATION

Government Outlines Attack On Automation

page 20

Toss an idea onto the flat surface of business routine and the tide begins to run. One business . . . yours . . . sets a new pace that affects an industry.

But the instant the energy of an idea is released on this otherwise tranquil scene, it begins to run into opposition. It upsets the pattern. It disturbs the routine. It outdates accepted procedures. Your business just isn't the same anymore.

Often, ideas encounter so much resistance from the natural reluctance to "do things differently" they wither and die. Their energy is sapped. They become outdated before they can be put into effect.

Like the nucleus of an atom, an idea is surrounded by problems, all soaking up its energy and containing it. Solving the problems that surround ideas is our job. McDonnell's experienced consultants review procedures and organization, find ways to speed the flow of information, of paperwork and reports. They recommend and conduct research into the effective application of your ideas. They turn to data processing to digest analyses, plans and schedules. They uncover needed extensions of work plans, raw material orders and manpower scheduling. They deliver projected results of idea application and let you make the decision about when and where to put the idea to work.

Ideas can make your company grow. McDonnell Automation Center consultants analyze and strip away the resistance to that growth by the effective application of automation techniques. Call or write us for a brochure or preliminary analysis of your needs, without obligation.

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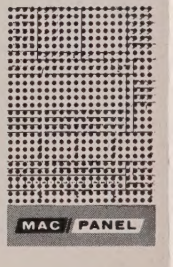
Making control panels is no game with us. No, sir! MAC panels receive our full attention. To lay our cards on the table (no pun intended), our main business is making panels . . . the best panels. Quality . . . service . . . value are primary considerations with us. Tab men everywhere have come to rely on these products. We've been in the field, worked in data processing installations. Recognizing the needs and meeting these needs with quality products, new products. We believe in giving you the best there is. Fast service, too. You see, we want to give you the most for your money. Our products are not the cheapest. Why build down to a price? We build panels you can rely on every time. So . . . ready to buy again and you're not one of MAC Panel's satisfied customers? Check beyond your present source, beyond price. Check MAC Panel . . . you'll be happy you did. Your deal!



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MAC PANEL COMPANY, High Point, North Carolina

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BUSINESS AUTOMATION

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Vol. 6, No. 5

Reporting and interpreting for management on ideas, developments, applications, results and impact of business automation in commerce, industry and government.

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"Quotes"

Scanning the news for interesting comments on the field of business automation.

"Data retrieval soon could build up into a business running into hundreds of millions of dollars a year. Practically every industrial and commercial company, every university, every research foundation and thousands of government departments are potential customers."—**Sim Amir, Worldmark Press.**

"We have come so far from piety in this materialistic age that those who worship scientific devices display no awe about the human mind that is able to create these marvels. We pay homage to those who make an intelligent robot, but little to Him who created the man. Like the ancients who bowed down to the golden calf, we give devotion to the computer.

"'A machine can be made to do the work of 50 ordinary men,' Belloc once said, 'but not 50 machines can do the work of one extraordinary man.'"—**Sydney J. Harris, widely-syndicated newspaper columnist.**

"Management will become steadily more analytical, and the role of 'hunch' and even 'informed judgment' will become steadily smaller. At the extreme, this will mean increasing use of sophisticated analytical approaches to management decision processes, such as mathematical programming and the extensive use of computers.

"In less extreme form, the critical change will involve increased clarification of the variables that need to be considered in making decisions, increased use of carefully considered quantitative information as to these variables, and increased use of rigorous analysis in weighing and combining the variables involved."—**G. Leland Bach, Carnegie Institute of Technology, in an article in Journal of Accountancy.**

"We are in the second generation of computers; a time when automatic input by magnetic ink, ordinary ink, punched tape and punched cards is taken for granted; a time when output can be measured by photographic speeds.

"It is the time of management information services. It is the time of information availability by advance decision; the time of intellectronics. It is the time in which these and a whole new series of coined words and phrases strikingly illustrate the need to express the significance and vitality of this great force through a language that wasn't prepared for its prodigious demands."—**W. P. Livingston, vice president, Bankers Trust Co., New York City, in a speech before the 1961 International Conference of the National Machine Accountants Assn.**

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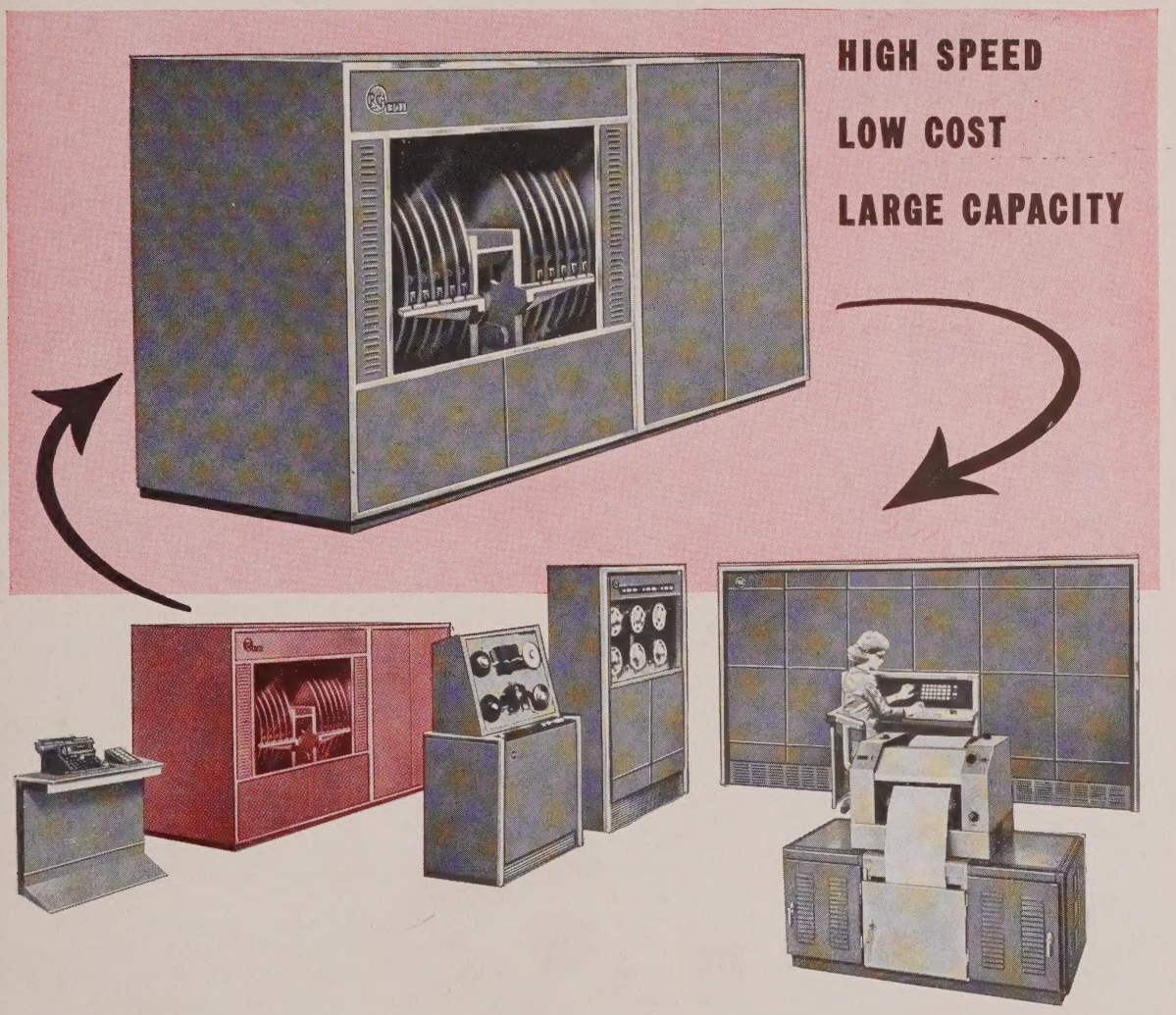

Utilizing the new Data Disc File, the RCA 301 is a fast random access system delivering all the advantages of *on-line* data operations—continuously current file maintenance, instantaneous file reference, timely management reporting—at millisecond speeds and exceptionally low total system costs.

Data Disc Files may be selected in increments of 22 million characters to provide large storage capacity for master files and related records. Transactions may be posted, or file records looked up, in as few as 10 milliseconds . . . in an average access time of 100 ms.

These features add up to the most capable random access processing in this price class, affording substantial savings on most random access jobs.

In planning your next move in electronic data processing, it will pay you to investigate the many innovations and economies offered by RCA. Write RCA ELECTRONIC DATA PROCESSING, Camden 8, New Jersey.

The Most Trusted Name in Electronics

RADIO CORPORATION OF AMERICA

For More Information Circle Reader Service Card No. 156

Letters

Dear Sir:

I read with considerable interest your editorial in the September issue of BUSINESS AUTOMATION and I greatly resent your insinuation and accusation that as chairman of of the Subcommittee on Unemployment and the Impact of Automation I failed to hear testimony from all facets of our society.

Apparently you failed to read the report of my subcommittee for there we listed those who testified before us and you will find representatives of management, education, government and labor. I am enclosing a copy for your enlightenment.

In every press release and in all statements that I have made as chairman of this subcommittee, I stressed the fact that automation was here today, it would increase continually, that additional technological developments were to be expected daily and these were necessary if our nation was to remain a world leader . . . but . . . I also stressed that the "benefits of these developments" must be shared by all of our people and not just a selected few.

Let me quote from my report:

"It was almost unanimously accepted by management, labor, government and university representatives that the present high level of unemployment is the most pressing domestic problem facing the American economy. . . .

"Automation is the problem of the present and the promise of the future. It is the means whereby the conquest of natural forces can be opened to the abundant benefit of mankind. Automation is not something to be feared and avoided. It is something to be harnessed and encouraged. The means of accomplishing this noble end are worthy of intensive study at all levels of man's activity. Government obviously will have an important role to perform in this economic and social drama."

I would like to call your attention to a statement made by Thomas J. Watson, Jr., president of the IBM Corp.—a representative of management who testified before my subcommittee. He states—and this is also in our report:

"We seem to have automated our country sufficiently to supply all of the basic demands and a good many luxuries, and still involve only 93 percent of our work force. . . .

"We can't argue that technological change and automation are not labor-saving processes. Of course they are. They do cause displacement of people. In fact, to do so is one of their major purposes. They may also upgrade people or increase the prosperity of an industry so that more are employed. Nevertheless, we do have more unemployment than we can tolerate today and some of it has come from technological change and automation."

Further in the report you will see Mr. Ralph Cordiner, chairman of the board of General Electric, put it this way:

"If, in spite of the best planning we can do, some people are temporarily unemployed because of technological change, both industry and government have a recognized responsibility to help families through any such periods of transition."

Mr. Don G. Mitchell, vice chairman of the board of General Telephone and Electronic Corp., said:

"It is the responsibility of the government to anticipate and to identify those trends which will create chronic unemployment problems in the future, and it has the responsibility to participate in the solution of those problems once they occur."

There is considerably more testimony which could be quoted, but I feel it would do you well to read the report in full. You will see that it was approved by all but one member of the subcommittee.

The Manpower Development and Training Act of 1961—HR 8399—was the result of these hearings and the subcommittee reported the bill out with one dissenting vote; the full Education and Labor Committee reported the bill out with a vote of 24 to 3; and this legislation is now in the House Rules Committee where Congressional members of both the Republican and Democratic parties testified in its behalf. Due to the lateness of the session, it was

decided to hold over this legislation until Congress convenes in January, at which time we expect it to be reported to the floor of Congress for a vote and passage. I might add that the Senate version of this legislation already has passed by a 2 to 1 vote.

I am enclosing a copy of the testimony of the hearings before my subcommittee so that you will have the opportunity to read the full proceedings and be better informed in the future.

I trust that you will give this information equal space in your magazine so that your readers and subscribers will have a "true" picture of a very serious problem with which this nation is faced and one for which we must find a solution if we hope to see our economic system survive.

Elmer J. Holland
Member of Congress

Dear Sir:

Your signed editorial on page 76 of BUSINESS AUTOMATION, published in the September 1961 issue, was brought to my attention. I would like to take issue with you on several points.

First you state, "We have yet to see any indication that the Labor Subcommittee on Unemployment and the Impact of Automation, headed by Representative Elmer J. Holland (D-Pa.) is interested in any testimony that would disagree with its own premise: that automation is The Great American Evil."

While I am certain that Representative Holland does not look on automation as The Great American Evil, I do remember that as chairman of the subcommittee, he stated for the record that he was finding it very difficult to get representatives of the major producers of computers to appear before his committee. In fact, the subcommittee was seriously considering the issuance of subpoenae because of the outright refusal of the spokesmen of these companies to appear.

Secondly, in quoting some of the statistics which I presented to the subcommittee, in referring to the Bureau of Labor Statistics' own study of some 20 companies which had installed computers, you stated that the study indicated that the actual rate of employment increase in 17 of these offices was seven percent. You failed to quote the very next sentence of that study which reads as follows: "This increase, however, was less than the 15 percent rise reported for clerical and kindred workers in the nation as a whole."

It is, therefore, apparent that while total white collar employment is on the rise, the employment in those companies which installed computers was approximately eight percent below the increase in the nation's average. In the interests of good journalism, I think you should have given the entire quotation from the study published by the Bureau of Labor Statistics.

I do not know of anyone who is conversant with this problem who actually feels that automotive machinery will not eliminate jobs. The Associated Press, for example, installed an IBM computer to tabulate and prepare stock market tables. The company plans to eliminate 55 positions and is asking the people who are occupying these positions to take standard IBM aptitude tests for four computer jobs which will remain. In other words, the computer created four positions and eliminated 55.

In the July edition of ADMINISTRATIVE MANAGEMENT, the experience of a California firm with a total clerical force of 3,196 is described. In this instance, the firm is centralizing some of its operations on a computer in San Francisco. With only two accounting functions converted to EDP, 286 jobs have already been dropped from the payroll and it is estimated that 982, or about one-third, of the workers are being affected. ADMINISTRATIVE MANAGEMENT is further quoted as follows: "While other companies cannot yet provide such precise information, it appears to be a fair estimate based on their experience thus far that for every five office jobs eliminated, only one is created by automation; and those which do not disappear, undergo drastic change."

As you quoted me, I stated that 10,000 computers will be installed in 1961. John Diebold, management expert, testified that 20,000 computers will be installed by the year 1970, which would indicate that my figures were exaggerated. However, very recently, Mr. Diebold's firm published figures which indicate that more than 5,000 computers have been installed during the first six months of this year. I would, therefore, say that the figures I presented to Representative Holland's committee may have been on the conservative side.

In conclusion, I would like to comment on your statement, "Even with vocal assistance from his friend James Hoffa, Coughlin's success in this area has been negligible." I fail to see what this reference to Hoffa has to do with the subject of automation.

For your information, however, please be advised that I hardly know James Hoffa, and that the Office Employes International Union, AFL-CIO, which I represent, has probably been the most consistent target for raiding and competitive organizing on the part of the International Brotherhood of Teamsters than any other international union in the field.

Howard Couglin
President
Office Employes
International Union, AFL-CIO

Random Access

Information bits from the editors' memory files

Aunt Hattie's Neckties

The next time Aunt Hattie sends you one of those atrocious neckties, you can blame it on a computer.

Neiman-Marcus, famous Dallas department store, has installed a computer to help uncertain shoppers get "the right gift" for any occasion. If Aunt Hattie can't think of a thing to buy, she can go to Marcus' and fill out a multiple choice form describing your age, sex, interests, profession, hobbies and other characteristics—plus the amount of money she wants to spend. This information is transferred to punched cards and then fed into the computer.

In 60 seconds, the computer has matched your description against the 2,200 items carried by the store and printed out a list of the 10 "most ideal" gifts for Aunt Hattie to buy. She selects one of the 10, a store guide directs her to the proper floor and department, and your tie is on its way.

The Neiman-Marcus "Gift Advisory System" was developed by International Business Machines Corp. to tie in with the store's recent two-week "American Fortnight" sale. A similar program is being used at an office machine exhibition in Hamburg, Germany, to help tourists select a suitable vacation spot.

Mighty Casey Has Struck Out

During the waning days of the last baseball season, Casey prepared daily forecasts as to whether Roger Maris and/or Mickey Mantle would crack Babe Ruth's 34-year-old home run record. Casey predicted that Maris would, but that Mantle wouldn't better the 60-run mark.

Casey's own average: .500. Mantle didn't make the grade (as Casey predicted), but neither did Maris—at least, not in the prescribed 154 games. Still, Casey's record wasn't bad; one for two is a pretty healthy average in anybody's league.

"Casey" is the nickname tagged on an IBM 1401 computer by Statistical Tabulating Corp., the firm preparing the predictions for daily publication across the nation.

Gesundheit

Increasing numbers of large German concerns are abolishing the traditional pay envelope and are depositing workers' wages directly into "salary accounts" at the banks of their choice.

The latest trend is dauerauftragsverfahren, which means: "permanent order procedure."

An individual can place a permanent order with his bank, authorizing payment of monthly bills of fixed amounts, such as rent, auto payments or insurance premiums. The basic document is a punched card; and through automatic sorting and grouping, an accounting machine can put out the necessary statements and summaries for the customer bank, the recipient's bank and the individual customer to eliminate a great deal of manual posting, adding and checking.

Now It's Official . . .

Celebrating a milestone in its 125-year history, the U. S. Patent Office recently issued Patent No. 3,000,000. The recipient: Dr. Kenneth R. Eldredge, a staff scientist at Stanford Research Institute. The invention: a read head for magnetic ink character recognition.

First devised six years ago when Eldredge was working on the automation of The Bank of America (see BUSINESS AUTOMATION, Sept. 1961, p. 20), the read head led to the development of the MICR system.

American United Life

Now in the top 3% of the nation's Life Insurance Companies

"Our NCR Computer is proving to be a highly-profitable investment!"

—AMERICAN UNITED LIFE INSURANCE COMPANY, *Indianapolis, Indiana*

"We believe our NCR Data Processing System is the answer to insurance record-keeping and processing needs. For all intents and purposes, it has taken the term 'delayed-processing' out of our vocabulary. We now process *today's* data *today*, and obtain *today's* reports *today*.

"Specifically our NCR Computer System has cut eight to ten days off reporting time. We are now able to better serve the respective reporting and record-keeping needs of the individual salesmen, as well as all levels of sales management. And, we can prepare customer premium notices in 1/25th of the time previously required.

"At this stage our NCR System is installed on about one-half of the jobs for which we intend to use it. However, we already have daily-working-experience to back up our conviction that we made a highly-profitable investment when we chose to install an NCR Computer System."

Clarence A. Jackson
President & Chairman of the Board
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Publisher's Desk

THAT THE EFFORTS OF BUSINESS AUTOMATION to substitute reason and fact for emotion and prejudice have touched some tender spots is evidenced by the letters on pages 8 and 9 from Representative Elmer Holland (D-Pa.) and Howard Coughlin, head of the Office Employes International Union. Both seek to justify recent actions of the House Subcommittee on Unemployment and the Impact of Automation by the continued use of false statistics, which are designed to scare the general public and influence other members of Congress.

The full report of this subcommittee . . . 793 pages in all . . . is an affront to anyone with even a slight knowledge and concern for the real effects on the business world.

To document the distortions and untruths which prevail throughout this incredible performance of a Congressional committee, Arnold Keller presents a capsule review of the most important statements, and their implications, beginning on page 20. Everyone involved in business automation and data processing . . . in fact, every business executive . . . should be aware of this effort to inject greater governmental control of our working population by using automation as the scapegoat.

The second in our series on leaders in the computer field features RCA. The entry into the burgeoning field of business automation of a firm never before interested in the office market as such is a meaningful story. It begins on page 26.

Managing Editor Don Young presents an excellent case study on the application of advanced data collection techniques to the problems of a geographically diversified manufacturer. Featuring Modine Manufacturing Co., this article further documents the possibilities of business communications, perhaps the fastest-growing segment of our industry.

Next month, watch for news of our second nation-wide computer salary survey.

Charles W. Gilbert

BUSINESS AUTOMATION

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The all-new Modular line shown here is a new concept in storage. Frame construction allows buying only what you need for your storage application. The basic 5,3 and 1 high units give low cost per reel storage. They may be fitted with Wright Line's new wire rack or shelves. An add-on feature allows expansion on either side, up or in back, all tied together as one unit.

Where there is need for security, the Deluxe line is available. It's totally enclosed but with the flexibility of storage in either wire racks or on shelves. For transporting reels, Wright has a new truck, compact but with load capacity and it can be fitted with an all-important work surface top. Carrying trays and reel racks give you quick handling of just a few reels.

Get the complete answer by calling your Wright Line representative or sending for your copy of "Tape Handling and Storage."

Modular units stacked 2 high with work surface top to give in-process storage.

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Honeywell 400 doubles-up on many jobs *Here's another important advantage you won't find on other systems in the Honeywell 400 price range. Information can flow into Honeywell 400 from external sources while a typical daily data processing operation is proceeding at full speed. As an example: one magnetic tape unit can be reading and another writing, while the high-speed printer is printing, and the Honeywell 400 can still accept full-time telephonic transmission of data from a remote location.*

Investigate before you buy *Many manufacturing, service, and government organizations that have taken a hard look at the whole field of EDP and evaluated and compared Honeywell systems against others in their classes, have chosen Honeywell. It is interesting to note that so many of these are the leaders in their industries.*

If you're thinking of replacing your outgrown punched-card or overburdened electronic data processing equipment, you owe it to your company to find out what Honeywell 400 can do. A brief talk with one of our sales representatives may tell you just what you want to know. Call or write Honeywell EDP Division, Wellesley Hills 81, Mass. Or Honeywell Controls Limited, Toronto 17, Ontario.

Honeywell

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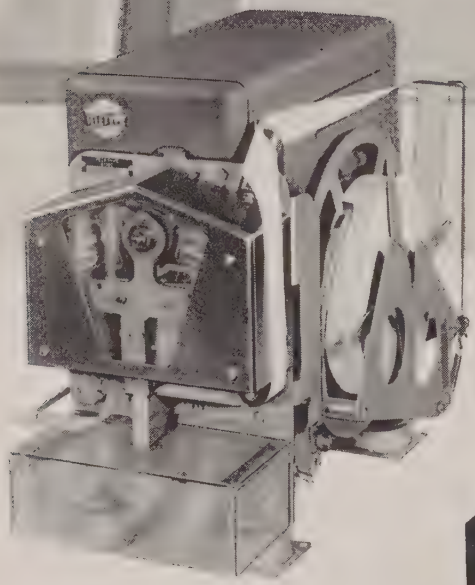
Honeywell EDP systems have already been evaluated and chosen by leading companies in a wide variety of industries: banks, railroads, communications, public utilities, insurance companies, advertising agencies, automobile makers, steel fabricators, tire manufacturers, government agencies, research organizations, food processors. Your company should be on this growing list.

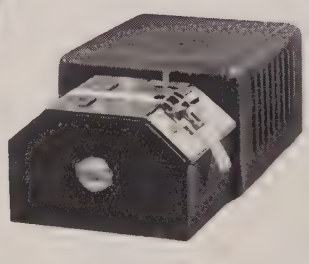
For More Information Circle Reader Service Card No. 193

Looking for a solution to your



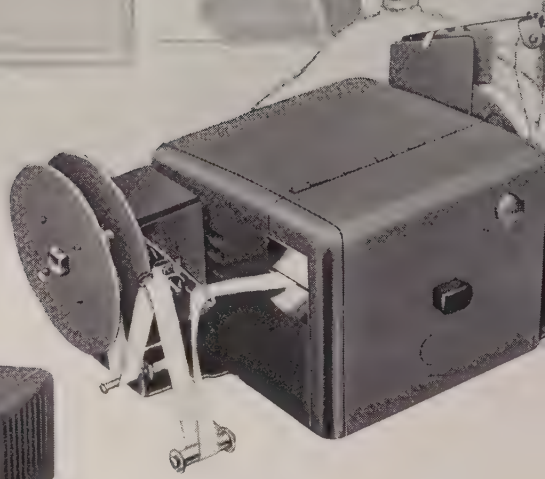
BRPE Tape Punch

Perforates 5, 6, 7 or 8 level tape at 100 char/sec. Synchronous unit, with parallel-wire input. For business machine readout, or, with deserializer, for data reception over DATA-PHONE or other high speed communication channels.



CX Tape Reader

Reads fully perforated or chadless tape—5, 6, 7 or 8 level codes—at 100 char/sec. For use as computer input device, or, with serializer, for transmission over DATA-PHONE or other high speed communication channels.



LARP Tape Punch

Produces 5, 6, 7 or 8 level tape at 20 char/sec. Parallel input. May be used for cross-office relaying, data collection, or providing by-product tapes from business machines. Companion input tape reader available (LX).

ata communication problems?

LBXD Tape Reader

Dual-purpose model: permits, (1) tape transmission on-line and/or to business machines, or (2) direct read-out (without tape) from business machines for on-line transmission. Speed, 10 char/sec; 5, 6, 7 or 8 level codes.

LPR Typing Tape Punch

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LXD Tape Reader

For on-line transmission of 5, 6, 7 or 8 level tape at 10 char/sec. Transmission may be pulsed.

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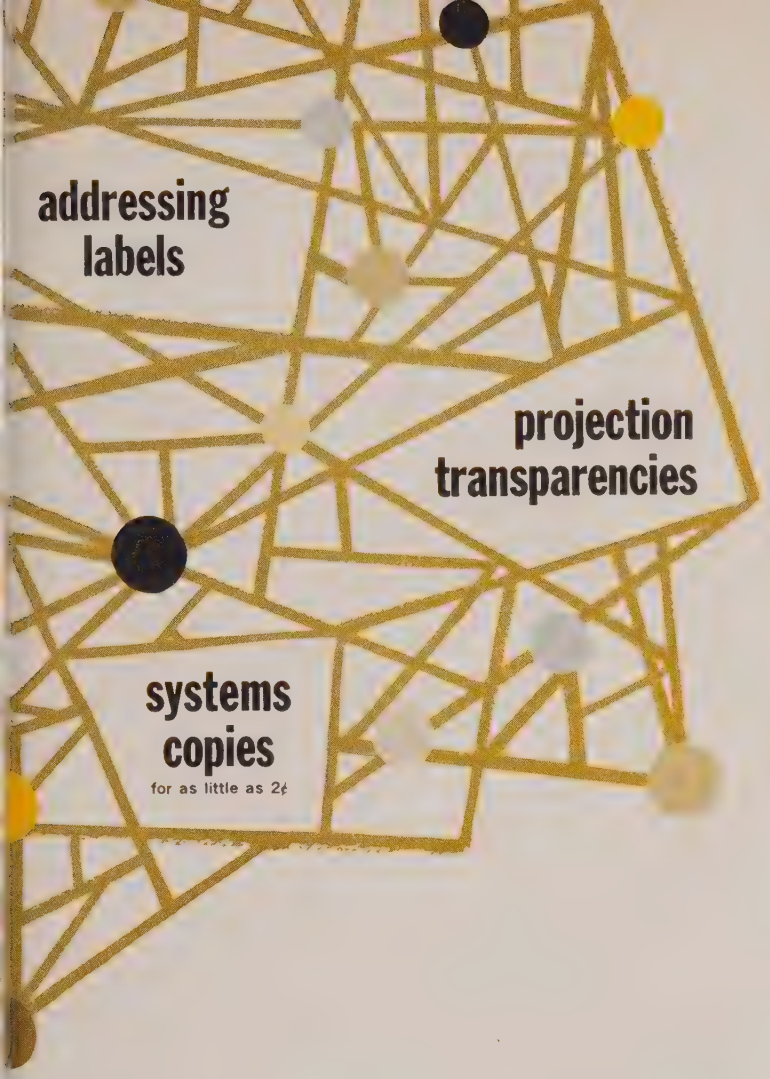

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Government Outlines Attack On Automation

Federal controls, proposed to eliminate unemployment "crisis," will cost $263 million in next two years.

By Arnold E. Keller

Automation was hit with everything but the White House during recent hearings before the House Subcommittee on Unemployment and the Impact of Automation, conducted by Rep. Elmer J. Holland, (D-Pa.), a dues-paying member of the United Steelworkers of America.

The hearings allegedly were for the purpose of gathering evidence concerning the actual impact of factory and business automation upon the nation's total work force. Instead, they appeared to be little more than window dressing to lend sales support to the administration's bid for legislation that would set up Federal controls over a large segment of the working population.

The Government leaned heavily on Labor to add emphasis to its theory that unemployment can be equated with automation. Of 21 witnesses offering personal testimony before the subcommittee, 13 were top-ranking representatives of organized labor. Star witness for the administration was the Secretary of Labor, Arthur J. Goldberg.

Members of Holland's subcommittee, all Congressmen, were: James G. O'Hara (D-Mich.), Neal Smith (D-Iowa), Charles S. Joelson (D-N. J.), Charles E. Goodell (R-N. Y.), Peter A. Garland (R-Me.), and Donald C. Bruce (R-Ind.). Chief Counsel was Walter Buckingham, a native of Atlanta and director of a graduate school at George Tech. Buckingham has authored a book on "Automation and Its Impact on Business and People," published this year by Harpers.

Neither labor nor Government testimony produced much in the way of factual evidence on the assigned subject. As a result, the hearings were long on generalizations and short of facts.

But lack of evidence was no deterrent to Chairman Holland, whose obvious interest was to obtain quick approval of pending legislation. The hearings moved at a fast pace,

Secretary of Labor Arthur J. Goldberg ► (left) with Rep. Holland (D-Pa.), head of subcommittee hearings on automation.

opening on March 8 and continuing on various days—12 in all—through April 25. Less than 35 hours of oral testimony was presented for the record and the bulk of this came from those friendly to the Holland cause.

In June, the subcommittee presented its findings and recommendations to the full Committee on Education and Labor, headed by Adam C. Powell (D-N. Y.).

Powell's committee subsequently sent to the house a piece of legislation based on the subcommittee's recommendations. This bill, the Manpower Development and Training Act of 1961 (H.R. 8399), awaits Congressional action next January. If passed, the bill will cost the taxpayers some $263 million over the next two years.

The best was none too good

The bill gives unprecedented power to the Secretary of Labor, making him a virtual czar of the nation's manpower. He will make studies of "the impact" in advance, develop solutions and publish the findings. He is empowered to promote or directly engage in programs of information and communications to reduce or prevent undesirable effects of technological changes, appraise the nation's effort to meet manpower needs, recommend needed adjustments and arrange for research to further these objectives. He also will make studies to encourage greater labor mobility in industry and report on these studies to the President who, in turn, will transmit to Congress within 60 days after the beginning of each regular session (beginning in 1962) a report on the nation's manpower requirements, resources, utilization and training.

In addition, the Secretary of Labor will develop and encourage the development of broad and diversified training programs, including on-the-job training for those who need it, accomplishing this through the maximum utilization of all possible resources for the development of skills, available to industry; labor; public and private educational and training institutions; State, Federal and local agencies; and other appropriate public and private organizations and facilities.

The Secretary also will provide a program of testing, counseling and selecting for occupational training those persons who need it to secure appropriate full-time employment, and provide original placement and later counseling services for those who complete such courses.

From the outset of the hearings, it was quite obvious that automation was in for a rough time. In opening remarks to the subcommittee, Congressman Powell cautioned: "The Frankenstein of automation has come closer to us." Though Powell had mixed his monsters, the implication was clear.

He then turned the proceedings over to Chairman Holland "with full assurance that he is going to do the best for our country." Later, there would be those who would agree that Holland's best was none to good.

It was little surprise that Holland, who boasts of "representing more steelworkers than any other Congressman in the United States," presented as his first witness, David McDonald, president of the United Steelworkers of America. In his introduction, Holland disclosed an interesting insight into the legislative processes on Capitol Hill. The Congressman said that it was due to McDonald's wisdom and the help of his staff that "we are able to present to the Congress the first bill on full employment and continuing prosperity."

The chairman paid another tribute to McDonald's influence at the close of his testimony. "I have to thank you for putting me on the right track when we were writing the full employment and continued prosperity bill . . ." said Holland.

McDonald's testimony, like that of the many labor heads that followed, made a strong plea for a 32 or 30 hour workweek. He urged immediate adoption of an "Invest in America" program that would include more adequate housing; more schools and better trained and better paid teachers; more hospital facilities; more recreation and vacation facilities; new and improved highway systems; new and better airports; aid for depressed areas; and more adequate unemployment compensation and social security programs.

A batch of homemade statistics

The steelworker's chief made it plain that there should be increased participation on the part of the Federal Government in all of these areas. When asked if he believed that an ever-increasing amount of Government housing, Government-supported schools, Government medical programs and Government-supported recreation and vacation facilities in socialism, McDonald replied that he did not. When asked to define socialism, he was unable or unwilling to do so.

The subcommittee was treated to a blast at business automation as a job destroyer by Howard Coughlin, president of the Office Employes International Union, AFL-CIO. Coughlin is the same gentleman that, last February, supplied Holland with the headline copy that four million office and clerical jobs would be eliminated by machines in

David J. McDonald, president of the United Steel Workers Union (left) emphasizes point to Chairman Holland during subcommittee hearings. McDonald said that a shorter work week without a pay cut was necessary to cure automation unemployment.

the next five years. His union has been having its troubles organizing white collar workers and he has been using the alleged threat of automation to job security as a campaign stimulant.

Coughlin had another batch of homemade statistics ready for the Holland hearings. Using an estimate that 10,000 computer installations will be made this year and that each computer will affect 140 jobs, the union leader asserted that "it is easily seen that in the year 1961, 1.4 million workers will be affected by these new installations." BUSINESS AUTOMATION'S latest figures indicate that the total of all types of computers installed to date in this country is still under 6,000.

Continuing his testimony, Coughlin quoted a statistic that 25 percent of all the jobs affected will be eliminated. He anticipated that 350,000 white collar positions would be permanently abolished by virtue of computer installations this year. Using a geometric progression that seemingly would eliminate the nation's entire white collar work force in a few years, he added: "We can reasonably expect that the number of computer installations will multiply at a rate in excess of 10,000 installations per year."

If, said Coughlin, "the increasing number of firms entering this field, and there are now 68, were able to double the number of installations in the year 1962, a minimum of 700,000 jobs would be abolished in that year, in addition to the 350,000 which we estimate will be lost this year. This number will increase to gigantic proportions as additional installations are made."

An individual responsibility

Coughlin's testimony, though unchallenged by the subcommittee, is subject to severe rebuttal. For one thing, it is impossible to apply any across-the-board average to the jobs affected by each computer installation. In many cases, the computer is the basis for an entirely new operation and as such, creates a number of jobs never before available. For example, the Hilton Carte Blanche credit card operation is built around electronic data processing and it is extremely unlikely that the Hilton management ever would have attempted the venture were it not for automation. Carte Blanche has three shifts of workers going around the clock in its EDP headquarters, on Sunset Strip in Hollywood. Coughlin's union was recently rebuffed in efforts to organize this group.

Bankamericard, the popular all-purpose credit card sponsored by the Bank of America, is another example of automation creating a new enterprise and new employment.

Howard Coughlin, president of the Office Employes International Union (right), told Holland and members of the subcommittee that his original prediction, of four million office and clerical jobs to be lost to machines, now appeared on conservative side.

It is not clear as to how Coughlin arrives at a figure of 68 computer manufacturers; there are less than a dozen companies specializing in digital computers for the business field. True, there are many more firms engaged in the manufacture of "scientific" computers, but these systems have no relationship to personnel displacement. In fact, the opposite is true; they have opened many new doors to employment opportunities. As Malcolm Denise, vice president, labor relations, of Ford Motor Co., pointed out in his testimony: "In the absence of high speed, accurate computers, capable of carrying out mathematical formulations to many decimal places, the work done by the Aeronutronic Division would have been impossible."

As far as Ford is concerned, said Denise, there would today be almost 2,200 fewer Ford employes if Aeronutronic had not been possible.

Perhaps the best answer to Coughlin's hair-raising statistics comes from Dr. Seymour L. Wolfbein, Deputy Assistant Secretary of Labor and the man assigned by the Labor Department to study the effects of automation. Although he did not testify at the Holland hearings, when asked in a recent interview if automation in the office would lessen some of the clerical opportunities, Wolfbein replied: "Automation is certainly going to affect white-collar employment opportunities, but my opinion is that there are going to be many more employment opportunities in this field. This is why we forecast a 40 percent increase in the demand for professional personnel in the 1960's."

In his testimony before the subcommittee, John Diebold, president of the Diebold Group, Inc., stressed the need for study at this time rather than action. "I think," said Diebold, "that it is very difficult to attribute much of the present unemployment to automation." He pointed out that little is known about the re-employment characteristics of the people that may be displaced.

"We don't know what people should be retrained for; we don't know what the educational needs are in terms of the impact of automation in 1965 or 1970," said Diebold.

When asked by Holland if some of the big corporations should cooperate with the Government on vast retraining programs, Diebold stressed that the retraining program is a very complex one. "I think it is partly an individual responsibility," he said. "Individuals must con-

stantly be concerned to education themselves."

"It seems to me," Diebold said, "that a lot more attention ought to be spent to looking at phenomenon and trying to forecast what is going to happen before we make broad statements."

Diebold's testimony contained an interesting commentary on the administration's attitude toward automation. He told of a case where one of the major plant modernization programs in the military had been criticized by the Secretary in that area because "I don't want to be in a position of backing anything that smacks of automation."

"A little house and a little land"

Throughout the hearings, repeated reference was made to the low unemployment figure in Sweden, which has a Government-controlled program for retraining and relocating workers. However, as was brought out by the testimony of Emerson P. Schmidt, director of economic research, Chamber of Commerce of the United States, Sweden has an entirely different method of counting the unemployed. Schmidt pointed out that when Sweden applied our method, they more than doubled their unemployment total.

Said Schmidt: "We have one of the most liberal formulas for counting the unemployed of any country of the world." (The United States unemployment total is not an actual count, but an estimate based on a sampling method. Also, it includes as unemployed those people waiting to be called back from a layoff or to a new job, and those whose search for employment has been interrupted by temporary illness.)

Schmidt also took issue with those who claim that business has failed to provide retraining for its personnel. He said that the American businessman is engaged constantly in the training and retraining program. He mentioned a study that showed the cost of on-the-job training and retraining by business exceeds the total expenditure in all public schools from kindergarten through the university level.

"In a way, you might say I was replaced by automation. My last job was driving a horse and wagon."

Other witnesses before the Subcommittee were: Leon Greenberg, chief, Division of Productivity and Technological Development, Bureau of Labor Statistics, U. S. Department of Labor; J. A. Beirne, president, Communications Workers of America, AFL-CIO; Paul A. Samuelson, professor of economics, Massachusetts Institute of Technology; David Sullivan, general president, Building Service Employes Interational Union, AFL-CIO; Solomon Barkin, director of research, Textile Workers Union of America, AFL-CIO; James B. Carey, president, International Union of Electrical, Radio and Machine Workers, AFL-CIO; and Harold C. Crotty, president, Brotherhood of Maintenance of Way Employes.

Witnesses also included: Glenn Rainey, professor of English, Georgia Institute of Technology; W. A. Faunce, assistant professor, Department of Sociology and Anthropology, Michigan State University; Patrick E. Gorman, secretary-treasurer, Amalgamated Meat Cutters and Butcher Workmen of North America, AFL-CIO; R. Conrad Cooper, executive vice president, personnel services, United States Steel Corp.; Stanley Ruttenberg, director of research, AFL-CIO; H. J. Gibbons, executive vice president, International Brotherhood of Teamsters.

Winding up the hearings were: Albert J. Fitzgerald, general president, United Electrical Radio and Machine Workers of America; A. J. Hayes, international president, International Association of Machinists, AFL-CIO; and Arthur J. Goldberg, Secretary of Labor.

With the exception of four witnesses, Cooper, Denise, Schmidt and Diebold, all of those testifying seemed to favor massive Federal programs and oppose a free economy as the best solution to unemployment. The welfare state philosophy of "a little house and a little land"—all at Government expense—was much in evidence.

Examples of frequent outbursts by Chairman Holland give certain evidence as to his leaning: "I think we ought to have the 'right-to-work' bill, but let it work the other way. Maybe the companies should pay people when they do not have a job for them. I think we are too easy with the whole problem. . . . I think what we have done in America is to destroy the soul of man, we are destroying it more and more every day.

A study of the 793 pages of subcommittee testimony leads one to the same conclusions as those of Donald C. Bruce (R-Ind.), who presented the minority views on the final report. Said Bruce: "I do not believe that the hearings developed any pattern of scientifically acceptable evidence concerning the actual impact of automation upon the total employment force."

As Bruce points out, the witnesses presented varying patterns of opinions, with witness after witness, including the Secretary of Labor, admitting the lack of accurate figures upon which to base valid conclusions. ■

Second in a series of profiles on American firms that are newcomers to EDP industry.

RCA and EDP—Together Wherever They Go

LIKE BREAD and butter, RCA and electronics go together. When business machines began to "go electronic" they moved right into the domain of the Radio Corporation of America, there to be embraced like the returning prodigal. The man credited with spearheading his company's rapid ascendancy in the field of business-oriented electronic data processing systems is John L. Burns, RCA president.

RCA's initial entry in the EDP market place was the 501 computer, announced in 1958 as the industry's first completely transistorized system. In the brief span of two years, the company has developed a full line of data processing equipment to handle the paperwork loads of business and government. In addition, they have marketed computers for industrial process control and electronic communication devices that relay business data over vast distances.

While the RCA surge in EDP has been a relatively recent event, over a quarter century of research has gone into the creation of the corporation's data processing systems.

As far back as 1935, a group of RCA scientists began a study of electronic computing devices. In 1947, at the request of the Navy Department, RCA produced its first computer, an analog device known as Typhoon, which was used to evaluate ship, airplane and submarine performances. Thousands of simulated test runs of proposed guided missiles have been made on the Typhoon at tremendous time and material savings to the government.

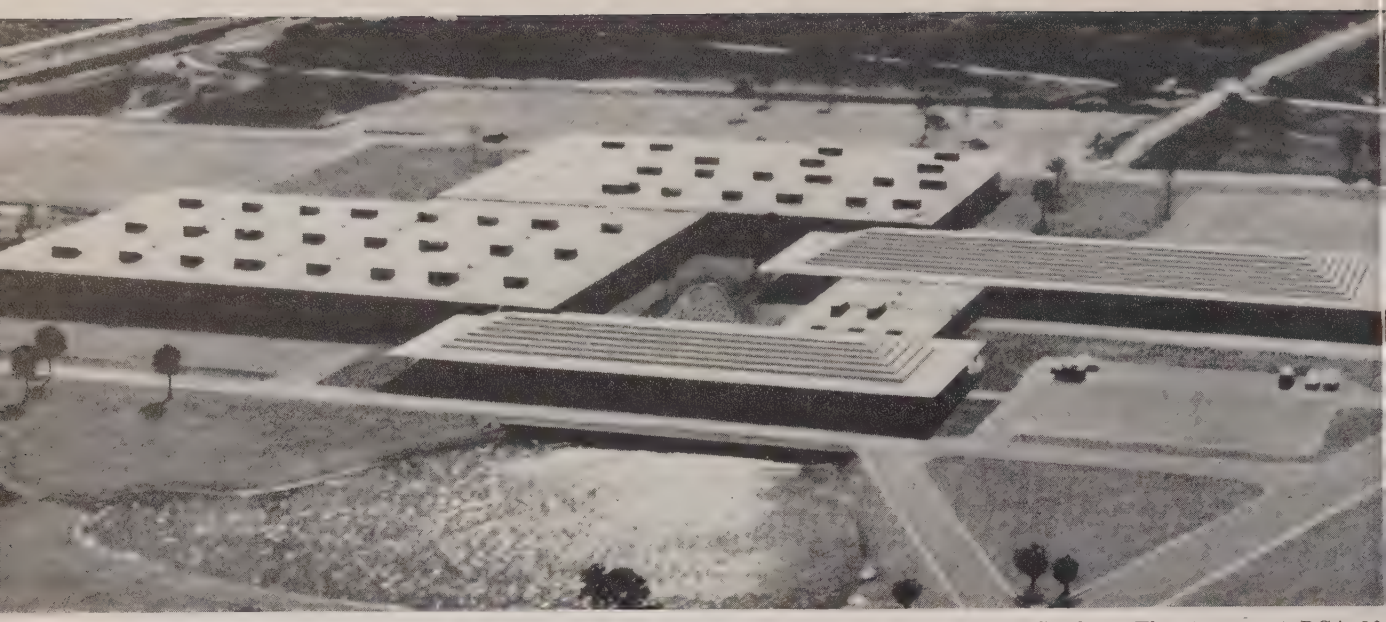
In 1956, RCA produced the BIZMAC system for the U. S. Army Ordnance Tank-Automotive Command (OTAC) at Detroit. The computer was designed to control the inventory and supply of parts for military bases all over the world.

BIZMAC (for "business machine") employs vacuum tubes and requires floor space the approximate size of a football field. It is the largest data processing system in operation anywhere today.

Theodore A. Smith, executive vice president (left), heads RCA's vast EDP operation. C. M. Lewis is systems administration manager.

Discussing the results achieved by this granddaddy of business computers, Brig. Gen. J. F. Thorlin, OTAC's Commanding General, comments that "the speed with which BIZMAC processes requisitions has produced at OTAC an extremely high degree of efficiency in supplying equipment to units in the field and insures continuous mobility of tanks and vehicles." As an example, General Thorlin pointed out that in 1956 a 55-day period for filling orders was considered to be the Army's on-time standard. Today, the standard has been reduced to a 25-day period. In addition, 80 percent of all orders now are filled during the 25-day period, whereas only 60 percent were filled during the 55-day period in 1956.

◄ In the court of RCA's new EDP production center in Palm Beach Gardens, Fla., employes gather to look at the plant's first 301 system assembled for shipment.



Four million dollar plant on a 115-acre plot near Palm Beach Gardens, Fla., turns out RCA 30 computers. The complex of one-story buildings covers 185,000-sq. ft. and houses administrative engineering, manufacturing and warehousing operations.

With the RCA 501 came the formal organization of the corporation's EDP activity.

As a first move, RCA's president Burns turned to one of the key members of his management team to carry forward RCA's drive in the data processing and allied fields—Theodore A. Smith, an executive vice president whose experience in the company's electronics enterprises dates back to 1925.

A tall, slender man with a reputation for getting things done quietly and efficiently, Smith has been handed sales, engineering and administrative posts of increasing responsibility down through the years with none of greater importance than his present assignment.

One of his early RCA tasks involved the supervision of construction for the firm's pioneer television station W2XBS, New York, in 1928. In addition to a broad background in the broadcast equipment field, he served as executive vice president and general manager, RCA Defense Electronic Products. Before taking over the reins of RCA Electronic Data Processing, he headed up the Industrial Electronic Products activity.

Under Smith are three principal departments:

Commercial Systems Department—the unit charged with the engineering, manufacturing and marketing of RCA's data processing systems.

Data Communications and Custom Projects Department—involved in such programs as the development of high speed switching equipment for transcontinental data communications systems and circuitry development for an advanced computer for the U. S. Navy, 100 times faster than anything now known.

Industrial Computer Systems Department—responsible for the development, production and marketing of RCA industrial computer equipment.

In September 1959, the second member of the RCA line of computers was announced—the 110 transistorized industrial control computer. Drawing heavily on the advanced circuitry and components of the 501, the 110 was designed as a high speed, stored program machine for on-line real-time automation of industrial manufacturing processes.

A compact in the family

The 110 will accept production control instructions from manual entry or directly from an RCA EDP center and, in addition to real-time control of the manufacturing process, it produces source data for the EDP center, thus completing the EDP loop from receipt of customer order to billing.

Last year, two more transistorized computer systems were added to the growing RCA family, the compact 301 and the bigger, more powerful 601. The 301 is designed to provide full-scale data processing for firms with as few as 300 employes. It is the first such system to employ magnetic disks, quite similar to the standard 45 rpm records, for memory storage, along with magnetic tape memory storage. The 301 can serve as a complete data processing system or as an auxiliary to the large 501 or 601.

The 601, capable of making 700,000 decisions a second, is geared to provide an enormous amount of work power. The system is capable of recalling a fact or figure from its memory equipment in only 1.5 millionths of a second.

Also announced in 1960 was the RCA 150 industrial data accumulator and recorder. Completely transistorized and employing core memory, it has computational capability for summarizing, averaging and totalizing. Monitoring at speeds of 1,000 points a minute, the 150 provides automatic alarms for process malfunctions and produces printed reports, as well as punched paper tape output for use by an EDP center.

Another new development is the RCA 130 industrial data transmission link, which efficiently and safely extends the one-line, real-time monitoring and control ability of the 110 and 150 to such widely dispersed systems as pipe-lines, power transmission complexes, oil and gas fields and offshore wells. It, too, is compatible with the total EDP systems concept.

Thus, just three short years after the 501 unveiling, RCA has become a leading EDP manufacturer, offering a complete range of transistorized computer services with both basic and peripheral equipment for all types of business, large and small. Each RCA system is based on the "building block" concept for maximum flexibility to permit a user to start with a minimum equipment complement and expand as the need arises.

To make complete data processing services available to the firm not in a position to install its own system, RCA launched an electronic systems center program. These centers are, in effect, "job lot" clearing houses for paperwork as well as showcases for RCA equipment and training sites for customer personnel. So far, centers have been established in Washington, D. C.; Chicago; the Wall Street district of New York; San Francisco, and at RCA Cherry Hill, New Jersey. Others are planned at additional key cities throughout the country.

Next month . . .

Church Turns to Electronic Fund-Raising

A tape-controlled file processor helps the Society of the Divine Saviour support missions, religious education.

also . . .

the world's most unusual railroad car is the traveling tabulating room operated by Canadian National Railways.

With the extension of its product line and growth in its work force, the RCA Electronic Data Processing Division carried out an accompanying expansion of its physical plant. In April 1960, the Industrial Computers Systems department moved into a new building at the Natick Industrial Center, 15 miles west of Boston. This year, a second building was occupied, doubling the plant's size, a move made necessary by increasing demands for the industrial computers and information equipment. In addition to its ready accessibility to highway, rail and air transportation, the Natick site was selected for its proximity to some of the nation's finest engineering schools.

In August of last year, a band of bulldozers attacked the scrub pine, palmetto and underbrush on a 115-acre plot near Palm Beach Gardens, Fla., clearing ground for a $4 million plant to turn out the RCA 301 computers. The plant, now occupied, is a complex of one-story buildings, comprising administrative, engineering, manufacturing and warehousing operations covering a total of 185,000 square feet.

The buildings combine modern convenience and tropical design. One of the unusual features is a lake in front of the administration building which appears to flow under the structure to a court. The lake serves the practical purpose of providing fire protection without the need for a water tower.

The 501 and 601 computers presently are produced at the corporation's Camden plant. Most of the administrative and home office personnel of the EDP division have been consolidated at the company's Cherry Hill, N. J., facility. The Cherry Hill complex, situated on 65 rolling acres in New Jersey's Delaware Township, comprises six buildings—five of them erected about five years ago and the sixth last fall.

Talent is a mother lode

One of RCA's greatest assets is its mother lode of engineering talent. While it touches all operating divisions of the corporation, it is concentrated in large measure at the David Sarnoff Research Center in Princeton, N. J.

The EDP division draws immediate and long range benefits from the engineering achievements realized at the center. Continuing efforts to make computers smaller and faster have resulted in such improvements as a radically improved tunnel diode and a miniature magnetic core.

The new diode, described as the world's fastest switching device, conceivably could count 10 billion one-dollar bills in a second or make computer decisions with equal speed. This tiny solid state device is being studied by the U. S. Defense Dept. toward the development of a computer that would operate at a rate of 10 billion cycles a second—100 times faster than any now in existence.

The "doughnut," a magnetic core no larger than the period on a typewriter, is for use in digital computer memories. Its significance lies in its miniature size and the tremendous speed with which it can store information in an electrically-induced magnetic field. The cores make it possible to build a memory about the size of a box of crackers that can store 500,000 bits of information.

Two developments already put to use are expected to give impetus to an increased use of data processing equipment. The first of these, Common Business Oriented Language, or COBOL (see BUSINESS AUTOMATION, March 1960) permits the use of simple English words to instruct a computer, rather than the complicated numerical code understood only by computer specialists. RCA was the first to implement the COBOL program for its 501 system. COBOL units are in the works for the 301 and 601.

The new universal language for computers, which Smith describes as "one of the most important steps yet taken in the computer industry," was put to test at the RCA Electronic Systems Center in New York City. Within three months, use of COBOL had cut programming time 30 percent, with indications that eventual reduction would hit 50 percent.

An RCA 501 is loaded aboard a chartered plane for Sto holm, where it is consigned to one of Sweden's largest ban

Computer for Kennedy

In addition to its own tests, RCA has joined Remington Rand Univac in a successful interchange test of COBOL-prepared programs.

Another development expected to lead to an increased use of data processing systems is RCA's DaSpan (for data span) a new type of communications network. Described as an "electronic pipeline," the system utilizes normal telephone or teletypewriter lines to outlying offices to feed business data to an electronic data processing center in a company's home office. The processed information is returned over the same facility.

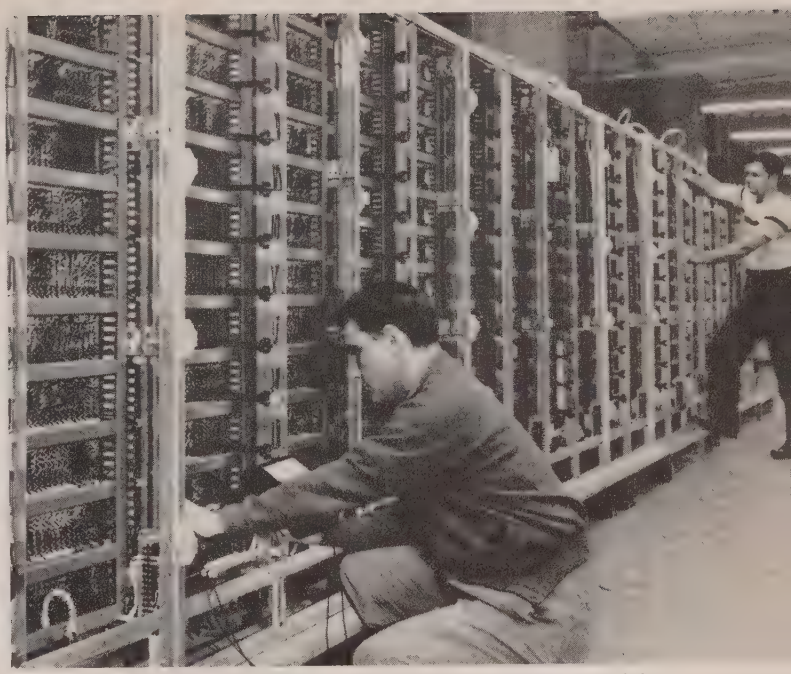
Smith envisions the not-too-distant day when small shopkeepers will be able to ask a data processing center to provide them with an estimate of inventory they should place on shelves, item by item. The computer will consider the geographical location of the store, the weather, previous sales figures, population increases and style trends.

After he has sold five percent of his annual or seasonal total, the proprietor of a store, predicts Smith, will be able to ask the computer what sales trends he can expect from the remaining 95 percent of his customers.

RCA looks to sales forecasting as one of the more important uses of computers. The technique available for such business projections was dramatically demonstrated during the National Broadcasting Co. coverage of election night last November. Called Operation Ballot (see BUSINESS AUTOMATION, November 1960), this was the first major test of the RCA 501 in full-blown trend analysis. At 8:23 p.m. election night, when 1.5 percent of the vote had been tallied in 60 key precincts and the polls were still open in the western states, the available data was fed into the 501 at RCA's Wall Street Center. The computer's projection that Senator Kennedy would receive 51.1 percent of the popular vote against 49.9 for Vice President Nixon, missed 100 percent accuracy by a scant percentage point.

A forecast package

Precisely the same technique can be employed in the business world, according to RCA experts. The company has developed a format for forecasting sales with the help of the 501. The program, which is being offered to customers in package form, relates sales with information on economic, human and geographic factors that influence sales. Also taken into account as necessary, are historical price structures, channels of distribution, discounts, competitive products and other strategic elements. The program is so devised that it will select from all those indices only those that are significant in a particular application (see BUSINESS AUTOMATION, August 1961, p. 20). A similar program is being employed by the RCA Home Instruments Div. to forecast television receiver



Units of the logic system of the 501 are checked by technicians on the assembly line at the huge RCA plant in Camden, N. J.

sales, and according to division officials, the program model developed in February 1960 still is forecasting sales of sets within two percentage points each month.

First of the RCA 301 "compact" computer systems has been installed at the Chase Manhattan Bank's new headquarters building at One Chase Manhattan Plaza in downtown New York. It is the first element in one of the most advanced EDP systems in banking operations. Eight additional 301 systems and two 501 computers will be delivered and installed by late 1963.

One of RCA's largest sales to date involved five 501 and seven 301 systems for the Bureau of Old-Age and Survivors Insurance.

The Public Service Electric and Gas Co., of Newark, N. J., will be another large user of RCA equipment. The utility recently signed an order for one 601 and five 301's. This will be one of the first uses of the 301 as off-line, peripheral equipment for the RCA 601. In effect, the smaller systems will serve as satellites for the big one, feeding it information, digesting information for it and printing at high speed the results of the 601 computing efforts.

The New York Telephone Co., General Tire and Rubber Co., the Air Force Accounting and Finance Center and the U. S. Navy Bureau of Ordnance are among other users of RCA computers.

France's Cie. des Machines Bull has placed an initial order with RCA for a minimum of 50 EDP systems to be marketed overseas.

An all-out venture into the development and production of EDP and industrial computer systems is an undertaking of staggering magnitude and one that carries with it many complex problems. These obstacles are taken in stride by the RCA policy makers.

Money-in-the-bank losses

They are firm in their belief that a decade hence, RCA will be one of the surviving major producers of the industry. They acknowledge that the computer business is essentially a leasing operation involving extremely expensive machinery. In addition to preliminary research and development costs, the computer manufacturer must be prepared to ride through a prolonged period of heavy expenditures that will end only when rental revenues begin to offset the outlay for designing and turning out computers and companion devices.

But these are described as "money-in-the-bank losses" that eventually will be returned many times over. It is recognized that while the cost of getting into and staying strong in the EDP industry was and is continuing to be enormous, the industry's potential is even more enormous.

Projections for the EDP industry for the next five years indicate a figure of $3 to $5 billion a year increase. RCA has its sights firmly fixed on a sizeable portion of that business.

Modine Gathers Payroll Data by 'Remote Control'

By Donald Young

FROM PLANTS in LaPorte, Ind., and Paducah, Ky., daily production and manpower statistics are being transmitted over leased telephone lines to the main headquarters of Modine Manufacturing Co., Racine, Wis. There, the statistics are utilized to prepare the plant's factory payroll and to prepare numerous reports vital to effective, economical production operations.

Information gathered and transmitted interplant includes each employe's clock number, the employe's working time and job assignments, the job number to which his work is to be charged and the quantities of work accomplished.

Turning data into paychecks is the responsibility of Charles Hartt (left), chief cost accountant.

All of these statistics are collected from punched cards at the plant; transmitted card-to-card from plant to home office; and then processed in the company's centralized tabulating department at the Racine office.

Modine plants in LaPorte and Paducah manufacture automobile and truck radiators—LaPorte, heavy-duty radiators for heavy trucks and tractors, and Paducah, lighter radiators for passenger cars and light trucks. The LaPorte plant employs some 250 people; Paducah, about 350. Sixty percent of the employes in these plants are paid on a piecework basis.

Drop it in the slot

Daily operations at Paducah provide an example of how the Modine system works:

The first responsibility of every plant employe is to "check in" when he arrives for work. This is done by selecting his punched employe card (by clock number) from an "in" rack in the plant and inserting it into the input station of an IBM 357 data collection system. The Paducah plant has eight input stations scattered at strategic points throughout the shop area for convenient manpower and job completion reporting.

Modine plants in Paducah, LaPorte manufacture radiators.

Payroll information or data for production reports, the source is a punched card, a keyboard and a data collection station.

The employe's clock number is picked up from the punched card; then transmitted to an output station which records it on another punched card and adds the time, day and date.

Three times during the day—prior to 7 a.m., after 3:30 p.m. and after 12 midnight—the system automatically goes into a locked "packed clock" condition to account for peak periods of attendance recording activity. During those times, attendance information on 11 employes is captured on a single card, to be machine-separated onto individual cards in the home office later on.

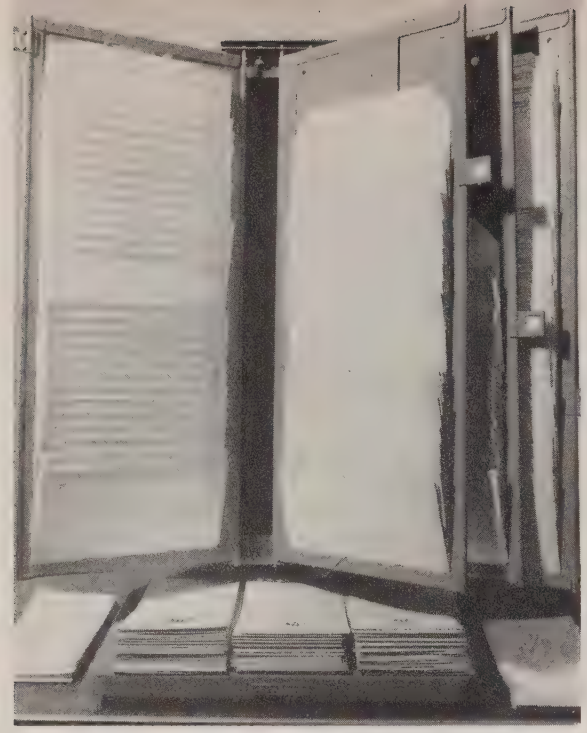
The plant employe, having reported for work, now is assigned to a job by his foreman. Each job within the section has been catalogued and all fixed data pertinent to that job has been prepunched into cards. As each worker completes an assigned job (or stops work on it for the day), he gets one of the job cards from his foreman and takes it to the input station. By inserting the job card and his employe card into the machine, he reports his efforts to the front office.

Variable information, such as quantity produced and the order number to which the work is charged, is entered into the data collection system by keyboard. Information gathered from the punched cards is duplicated on cards at one of the two output stations in the plant's front office. If the worker should make an error in entering this information (by forgetting to insert a card or to set up the keyboard), a light on the machine signals his error and the card is invalidated. All valid cards receive a punch in column "81" as they are verified; therefore, invalid cards can be separated quickly by running a "needle" through that column and sorting out the un-punched cards.

Parlez-vous punched cards?

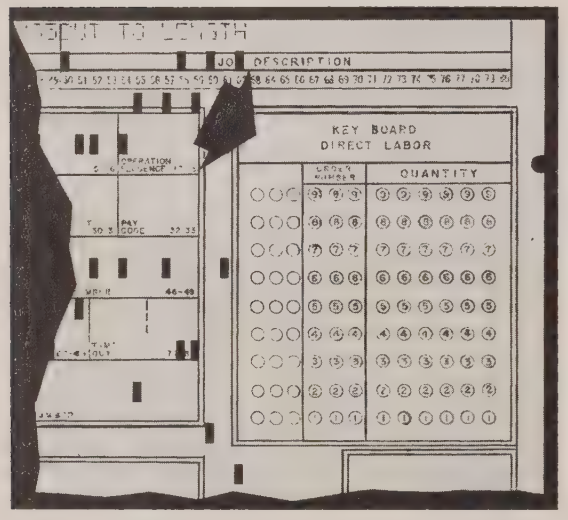
Non-standard jobs, naturally, do not have prepunched cards and must be recorded in handwriting. This alone calls such "extra" jobs, which need special processing, to the foreman's attention more quickly and more positively.

Later in the day, the accumulation of attendance cards and job cards collected in the front office from the various input stations throughout the plant is relayed to Racine via Transceiver. A telephone call alerts the Racine office that punched cards are to be transmitted, both plants get their Transceiver equipment in readiness and the data from the Paducah cards are duplicated electronically on blank cards in the Racine office. When



Rack is used by plant foremen to store pre-punched cards needed to record the various job functions performed within his section.

Plants relay data card-to-card to the home office in Racine through the use of Transceivers.



Modine's punched cards have a printed "keyboard section" which the foreman may mark to tell the worker exactly what variable information he is to enter via keyboard on the data collection system. This data includes such information as quantity and job order number. The small hole on the upper right-hand edge of the card is a verifying punch in "column 81," establishing the validity of the card and the information which it contains.

not transmitting data, the phone line is used for voice communications.

Each punched card carries a transaction code which tells at a glance the type of data that is being received. In Racine, the daily payroll information collected over this system can be processed in less than one-half day. By the third day after the close of the payroll period, the weekly payroll checks and all of the company's labor distribution and cost control reports have been prepared.

To be sure that information received from the plants is both accurate and complete, Racine selects a department at random each day and feeds back its statistics for an audit of quantities. This keeps both ends of the line on the alert.

Cards are summarized daily. Payrolls, including the computation of gross pay, less deductions, are prepared at the end of the week.

The benefits of Modine's new data collection and processing system are numerous.

"It provides us with additional information, previously unattainable, without excessive cost; it gives us better cost control; and it pinpoints responsibility," says Charles Hartt, chief cost and budget accountant. "We also gain accuracy in our reporting; for example, under the old system, excess costs had to be charged to direct labor, but now we can charge them where they belong. Our foremen, for the first time, are free to do more planning and to provide better job supervision."

Spot-Recording Production Data Leads to Numerous Reports

In addition to the payroll statistics it provides, Modine's data processing system collects information from which the company produces the following production and accounting reports:

Summary of departmental productive activities (weekly), showing part number, operation sequence, department charged, quantity, pay code, variance code, standard earnings, variance amount, total earnings, setup total earnings, number of cards and clock number.

Piecework earnings compared to earnings at base (weekly), showing department number, clock number, hours, actual earnings, earnings at base and the ratio of actual to base earnings.

Report on work that has no standard or estimated standards (weekly), showing expense department, occupation code, part number, clock number and dollars.

Tool order and tool sales order costs (weekly), showing tool order number, AFE (authority for expenditure), department, hours and amount.

Summary of overtime hours (weekly), listing expense department, account number, clock number, day, hours, dollars and subtotals for department hours and department dollars.

Summary of direct labor variance by variance code (weekly), listing variance code, rated variance, non-rated variance, standard direct labor and subtotals for each by variance code. (Similar data is used also in the preparation of a weekly report on direct labor variance by department responsible and by variance code.)

Tool room and maintenance labor by expense department (weekly), listing expense department, responsible department, account number, day, hours, amount and subtotals for hours and amount by responsible department. (Similar data is used in the preparation of a weekly and monthly report on tool room and maintenance labor by equipment number.)

Statement of charges made by others (weekly), listing department, order number, account number, department charging, amount and department total.

Report on labor distribution by department responsible and by account (weekly and monthly), showing the department responsible, account number, expense department, hours and dollars. (Similar data is used in the preparation of weekly and monthly reports on labor distribution by account, by responsible department and by expense department; and weekly and monthly reports on labor distribution by account.

Report on repairs to defective manufactured parts (monthly), showing repair order number, expense department, dollars and subtotal by repair order number.

Report on indirect labor work order costs (monthly), listing work order number, department responsible, expense department, amount and subtotal.

The new system is more accurate because it is immediate; workmen do not have to "think back" to work that has been accomplished throughout the day. Since information is available sooner, faster and more efficient control is possible. With pinpoint cost accounting, foremen have become more cost-conscious.

Hartt plans to parlay these into additional benefits. This year, he will be able to set up department budgets for the first time. A standard cost system also is in the offing. Other ideas in the planning stage: the use of machine-gathered information for production control, inventory contory, scrap control and a study on machine loading.

Additional reports, soon to be adopted, will include a report on incentive, compared to base earnings; and a summary of productive activities for the week, showing everything done in a given department, what it cost and how long it took.

Prior to the installation of this system, Modine collected similar manpower and production data on handwritten cards, completed by the various shop foremen and then computed manually in the front office. Computations normally took about a week under that system.

When employment at the Paducah plant was up to around 500 persons, six full-time employes were required to maintain the payroll records there. With the new system, two people are required.

Only the Paducah plant is using the automatic in-plant data collection system. Both Paducah and LaPorte—and ultimately, a new plant, now being built in McHenry, Ill., also—use Transceivers to relay statistics to Racine.

A fourth plant in Whittier, Calif., is not tied into the system because of the distance involved. Line fees from such a distance would be so costly, says Hartt, that the California operation can be run more efficiently by processing its own payroll and production reports. ■

A new line of color-engineered auxiliary units created specifically for the modern automated office!

DATACASE

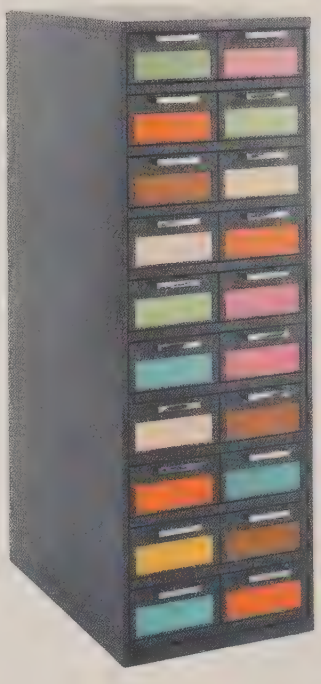
BY STEELCASE

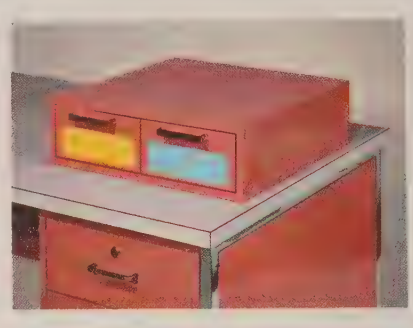
Datacase is a new word for a new line of punched card files, key punch desks and chairs, Convertibles and magnetic reel storage cabinets created specifically for the modern automated office. Each unit is characterized by smart design, superb workmanship and inspired engineering—and set apart by the widest variety of colors offered in the field. Choose from twenty-three exciting standard colors, subtle complementaries, vibrant accents . . . all in acrylic for a hard plastic lifetime finish. Created by the world's leading manufacturer of fine steel office furniture. Steelcase Inc., Grand Rapids, Michigan; Canadian Steelcase Co., Ltd., Don Mills, Ontario.

PUNCHED CARD FILES

No. 7020 file. Capacity: 20 trays, 76,500 cards. In No. 810 Grey with full card label holders, mirror-finish chrome hardware.

Datacase punched card files—full height, counter/desk height files—provide maximum storage space consistent with sound construction and ease of use. Removable trays, a masterpiece of design simplicity, roll easily on ¾ suspension ball bearings, function perfectly for both machine processing and manual use. Also available: 10 drawer counter-height file; capacity 38,250 cards.





DESK TOP FILES

No. 7002 two-drawer desk top file. Capacity: 4,912 cards. Four-drawer and single-drawer desk top units also available. Especially useful for master cards and decks of cards which must be always available. Units may be batteried vertically or horizontally. Interchangeable trays, with low sides for fast reference.

Flexibility where it's needed . . . Beauty where it's appreciated . . . Efficiency where it counts!

No. 7200 key punch desks and No. 1231 posture chairs in Bamboo. Hidden clip holds desk to machine tightly and firmly. Plastic laminate tops with stainless steel binding.

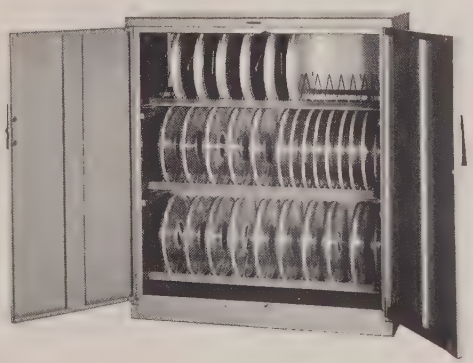
Key punch Convertibles. This Z-shaped arrangement consists of two key punch desks, two machines and a Convertible top supported by two Convertible cabinets.

KEY PUNCH DESKS

In many DP offices, key punch operators are the only employees without desks. They rarely have enough storage space, seldom sufficient working top space, never a place for personal effects. To add hazard to discomfort, important cards and papers must be stacked on and around the key punch, where they can be lost or mislaid. The new Datacase key punch desks and Convertibles solve these problems quickly, easily, inexpensively. Large, roomy drawers help organize work, allow ample storage space for supplies and personal effects. And, the extra-large work surface provides welcome area for cards and other source documents.

Datacase is sold only through leading office equipment stores.

Datacase is sold, installed and serviced by the Steelcase office furniture dealer in your area. Call him today for your free copy of our new Datacase catalog. Or, fill out and mail the coupon. We'll send you your copy by return mail.

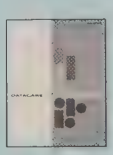


MAGNETIC TAPE REEL STORAGE

No. 7115 counter-height cabinet with 3 magnetic tape inserts. Capacity: 57 reels. Two locking doors. Designed to provide greater security at low per-reel storage cost in the processing area. Also: No. 7116 cabinet with 5 tape inserts. Capacity: 95 reels.

STEELCASE INC., GRAND RAPIDS, MICHIGAN

Gentlemen: Please send me a free copy of your Datacase catalog immediately.



Name_____

Position_____

Company _____

Address_____

City_____ Zone_____ State_____

BA

Fair Lanes bowling alleys in 28 locations blanket the eastern seaboard.

ADP Is Right Down Their Alley

THE NATION'S largest bowling operation has learned that business automation is "right down its alley."

Fair Lanes, Inc., with headquarters in Baltimore, Md., and 28 bowling centers all along the eastern seaboard, already has benefited from another type of automation—the installation of Brunswick automatic pinsetters. Now the company is using the same modern kind of approach to the performance of its office activities.

According to Edmund F. Hoey, executive vice president, Fair Lanes' biggest customers are its many bowling leagues. Management's job is to keep the organization's 1,000 alleys in use as steadily as possible, and its bowling leagues are solid, good-paying customers. Therefore, service to the leagues becomes an important part of management's responsibility.

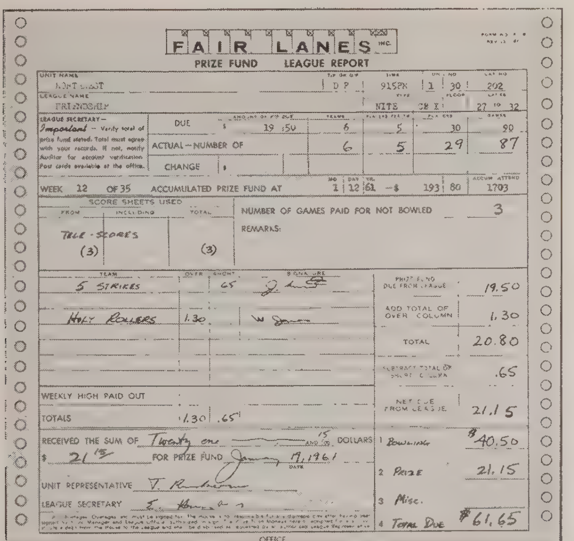
Using punched cards, an IBM 402 accounting machine and a specially-prepared form, Fair Lanes services its league customers by maintaining much of their tedious paperwork. Such information as how many weeks the league has been playing, how many games remain to be played, how much attendance the league has recorded and the league's financial position all is contained on Fair Lanes' machine-prepared form. Over 500 league reports are processed hourly at the company's data processing center in Baltimore.

When a league is formed, the bowling center manager gets the league name, whether it is to be a duckpin or a tenpin league, the lanes to be used, the number of teams, the number of players per team and the number of games to be played. This information is forwarded to Baltimore and put into punched cards.

The punched cards are run through the accounting machine and a three-part league record form is printed up (see illustration). This form is returned to the bowling center manager, who has current forms of this sort on every league that is using his alleys.

After the league has finished a night's bowling, the league secretary and the bowling center manager complete the league record form by filling out the appropriate blanks at the bottom of the page. This information includes the actual number of teams and players participating, the total number of games bowled, funds due for bowling and for prize money, and pertinent credits and debits.

Master cards on all leagues are updated in Baltimore weekly.



FAIR LANES INC.
PRIZE FUND LEAGUE REPORT

UNIT NAME: NORTHEAST — D P — 915PM — 1 30 — 202
LEAGUE NAME: FRIENDSHIP — NITE — 27 TO 32

LEAGUE SECRETARY— Important — Verify total of prize fund stated. Total must agree with your records. If not, notify Auditor for account verification. Post cards available at the office.

	AMOUNT OF P/F DUE	TEAMS			GAMES
DUE	$ 19.50	6	5	30	90
ACTUAL—NUMBER OF		6	5	29	87
CHANGE	$				

WEEK 12 OF 35 ACCUMULATED PRIZE FUND AT 1 12 61 —$ 193 80 — ACCUM. ATTEND. 1703

SCORE SHEETS USED: FROM — INCLUDING — TOTAL: TELE-SCORES (3) — (3)
NUMBER OF GAMES PAID FOR NOT BOWLED 3
REMARKS:

TEAM	OVER	SHORT	SIGNATURE
5 STRIKES		65	
HOLY ROLLERS	1.30		W

WEEKLY HIGH PAID OUT
TOTALS 1.30 .65

PRIZE FUND DUE FROM LEAGUE	19.50
ADD TOTAL OF OVER COLUMN	1.30
TOTAL	20.80
SUBTRACT TOTAL OF SHORT COLUMN	.65
NET DUE FROM LEAGUE	21.15
1 Bowling	$40.50
2 Prize	21.15
3 Misc.	
4 Total Due	$61.65

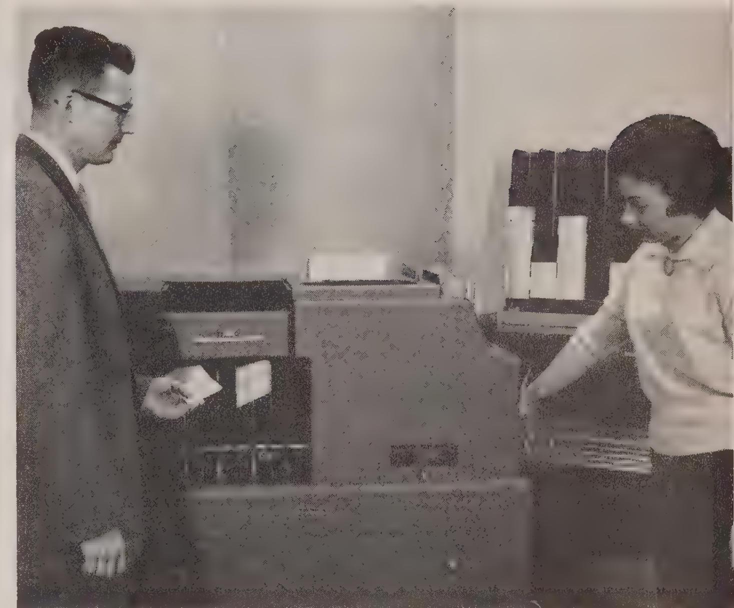
RECEIVED THE SUM OF Twenty one AND 15/100 DOLLARS
$ 21 15/100 FOR PRIZE FUND January 17, 1961 DATE
UNIT REPRESENTATIVE V.
LEAGUE SECRETARY E.
OFFICE

Machine-prepared record forms are complete, concise.

Receipts of funds is acknowledged by both the league secretary and the bowling center manager in a special section at the lower left-hand corner of the form.

The completed form is signed by the league secretary and the bowling league manager, each of whom keeps a copy for his own records. The remaining copy goes back to Baltimore, where updated information is punched into new cards and a new league record form is printed up for the following week's play. (Actually, league record forms for every league to play during the coming week are received by the bowling center manager in time and date sequence.)

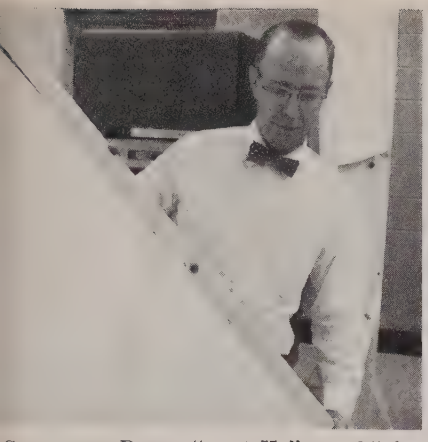
Up-dated league record forms show how far the league has progressed, accumulated attendance to date and accumulated prize money to date. ■

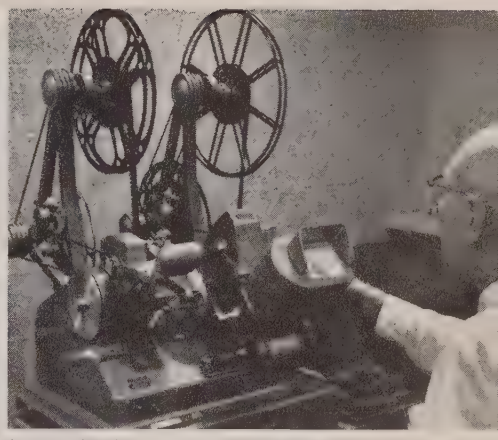


Collator combines master cards with newly-updated league information prior to run through tabulating machine.

Reports are sent to alley managers in time and date order, a job made easier by pre-sorting the punched cards. The cards are coded with a unit number and a date for each league.

Dayton Richert slates a scene as Consumers Power Co. films its movie on computers.





Consumers Power "went Hollywood," from using stage props for background and lighting to filming and editing the finished movie.

The Camera's on Computers

THE INSTALLATION of a computer brings about many changes within a company and it is not always easy to find a way in which to explain this progress to employes who are accustomed to—and probably satisfied with—"the old way."

Consumers Power Co., Jackson, Mich., faced this problem and met it in an unusual manner . . . by producing its own 16mm motion picture.

Consumers Power was aware of the possibility that the flashing lights of the console and the click-clack of the punches and printers would have a disturbing effect on adjacent employes, but the computer's impact—and the need to explain it—also would extend far out into the field. Meter readers, for example, would have to abandon their 20-year-old custom of writing numbers in a book and begin to mark punched cards with an IBM pencil.

Most important, perhaps, was the possible reaction on those employes who worked in 12 division offices and who regularly dealt with the public. Previously, customer inquiries could be answered by looking up, referring to and showing the customer the actual records from which his bill was prepared. With all the accounting centralized in Jackson, customer inquiries would have to be answered from machine-prepared reports, processed in a little-understood way, by persons not available when a question arose.

Computer-produced bills were neater, more accurate and more informative than the old bills, but accounting personnel would need a full appreciation of machine-prepared reports if they were to answer inquiries competently. The average customer—with a latent distrust of all things mechanical—would have to be reassured by accounting personnel that all was well.

Consumers Power worked the problem out under the leadership of a man much concerned with it—Jack Bromley, assistant controller. Aware that visual education is the best method of teaching, and also cognizant that it would be impossible to transport 2,400 employes from all over the state into the data processing center, Bromley's plan was to take the computer to the employes—via a color motion picture.

Showing at local utilities

The movie turned out to be the most economical and effective means, by far. Since Consumers Power has its own photographic department, cost was held to a bare $600. This relatively minor expenditure produced five prints of a 13-minute film which was shown to employes in every division and which has been repeated many times for the benefit of new employes.

An educational team accompanied the film to each division to explain the new system in detail. The team performed a valuable service, but its effectiveness was enhanced by the film, particularly in many areas where "telling" could not compare with "showing." For example, to a person unfamiliar with computers, it is difficult to explain how pencil marks can be converted to punched holes and how these can relay a message

Typical scene from the movie shows an operator inspecting bills as they are fed through the automatic printer.

to the computer. These operations are shown in the movie.

The picture was even of value to those personnel who worked alongside the computer. In many cases, these people were familiar with their own jobs, but were not acquainted with their relationship to the entire system. Besides showing them this relationship, the film added pride and prestige to some jobs which otherwise might have been considered "back-breakers."

How was the movie produced?

Once the idea for a training film had been approved, Bromley wrote a script which he felt would best educate Consumers Power employes to the computer operation. This was turned over to the photographic department, which consists of Arthur W. Miller, chief photographer; Roy Hills, assistant photographer; and Dayton Richert, visual aid technician. The three-man team does all photographic work for the company, which serves an area of almost 29,000-sq. mi., including 64 of the 68 counties in the lower peninsula of Michigan and supplies electricity, natural gas or both to some 1,250,000 customers.

Cameras on location

The crew made some minor revisions in the script and timed the reading of each scene. Then they went to the Customer Accounting Section where Christian Picket, supervisor, and Robert Cushman, tabulating operations supervisor, gave them their first look at the IBM 650 computer which was to "star" in the movie.

The crew scheduled each scene for enough time to match the script. For a long scene, different views, such as closeups, long shots and various camera angles, were planned for variety.

Filming took only four days, with Miller doing all the photography. Richert stood over him with a stop watch to see that he took just a little more film than the scene required.

No professional actors were used; Consumers Power employes handled all the roles.

Principal problem was that of scheduling shooting time so that it would not conflict with machine operation. Since the crew required from 30 minutes to an hour at each machine, it was important to schedule a time when the machine was not needed and the filming would not disrupt the entire computer operation. Thus, machines were photographed in the order of their availability, not in the order of the script.

Entitled "Your Service Bill," the movie opens with a postman delivering the mail, including a Consumers Power bill. The scene then changes to the Customer Accounting Section to show how customer records are maintained on punched cards. Every step in processing the bill from that point on is described and illustrated.

A world premiere

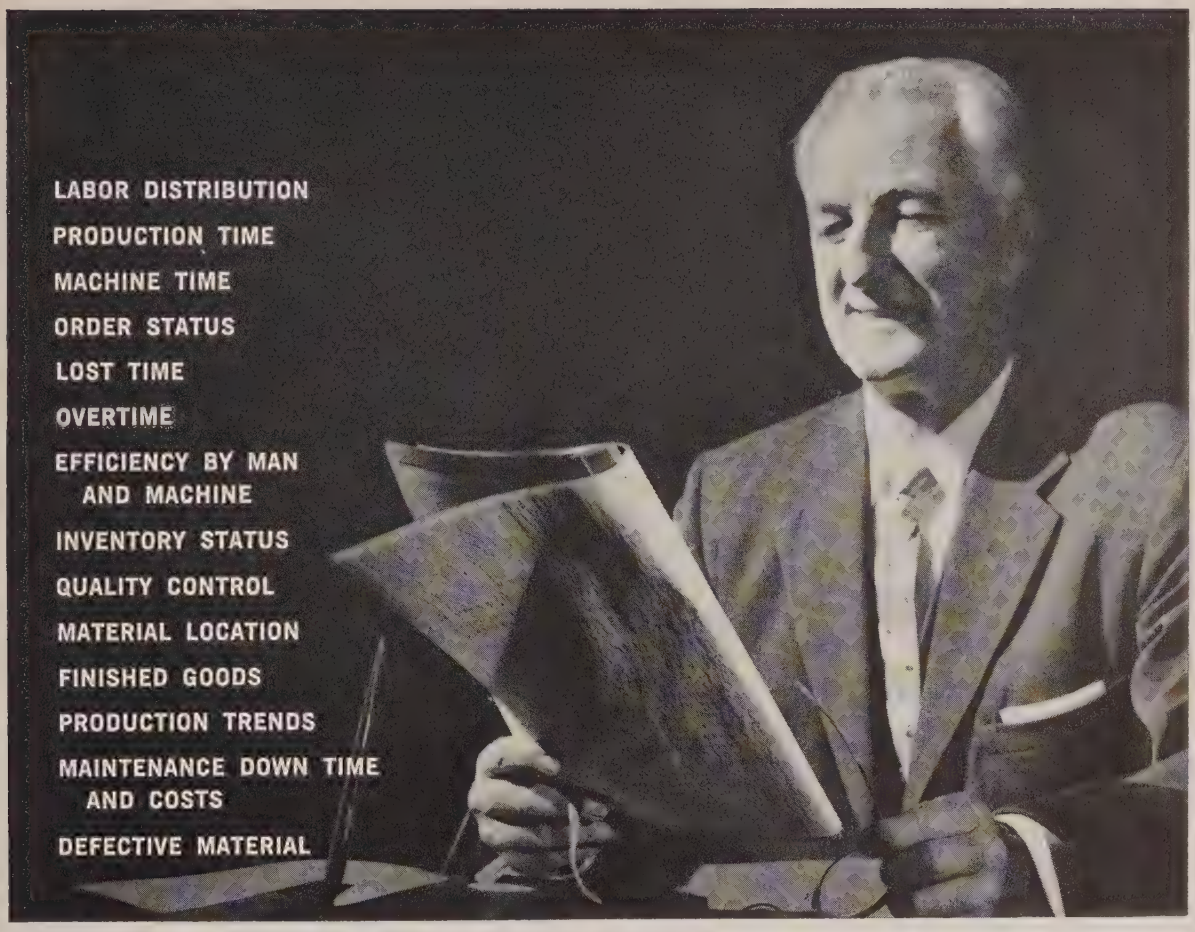
The final movie ran 475 feet in length. It achieved its prime purpose of educating Consumers Power employes to the new centralized accounting system as no other method could have.

The film was so successful that it was shown to the American Gas Assn., the Edison Electric Institute and to other utilities throughout the United States with computer or centralized changeover problems. It has been sent abroad for showing in England and Australia.

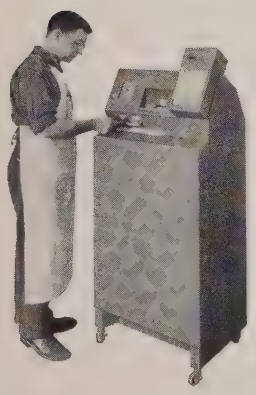
In addition, portions of the movie served double duty by being used in the annual "Report to the Stockholders" film, a movie made each year and shown at meetings all over the state.

Miller used a Cine Kodak Special 16mm camera with a one-inch and a wide-angle lens, and Type A Kodachrome film. The exposed film was processed by Eastman Kodak and edited by Richert. J. W. Kluberg, Consumers Power controller, narrated the script onto an ordinary tape recorder. His words were transferred to magnetic film by a nearby laboratory. Richert's work print and the magnetic film were sent to an outside lab which produced the finished sight-and-sound print.

Since its first computer was put in operation, Consumers Power has installed two more and now is in the process of installing an IBM 7070 data processing system. ■



How many of these facts are you NOT getting?



Use a Stanrecorder to record *all* the source data that originate in your production departments and you've taken the first step toward *completely automatic* control over labor distribution and production operations.

Listed above are the types of facts that Standard Register's Stanrecorder can collect and record for you—quickly, accurately, and at low cost.

The Stanrecorder gathers all source data on one form—time, man, operation, location, variables, production counts, and order identity. Furthermore, the data are gathered so systematically that subsequent processing can be completely automated, all the way through your accounting system. And still another feature, you obtain a complete audit trail because data are originally entered in exact chronological order on a continuous Standard Register form.

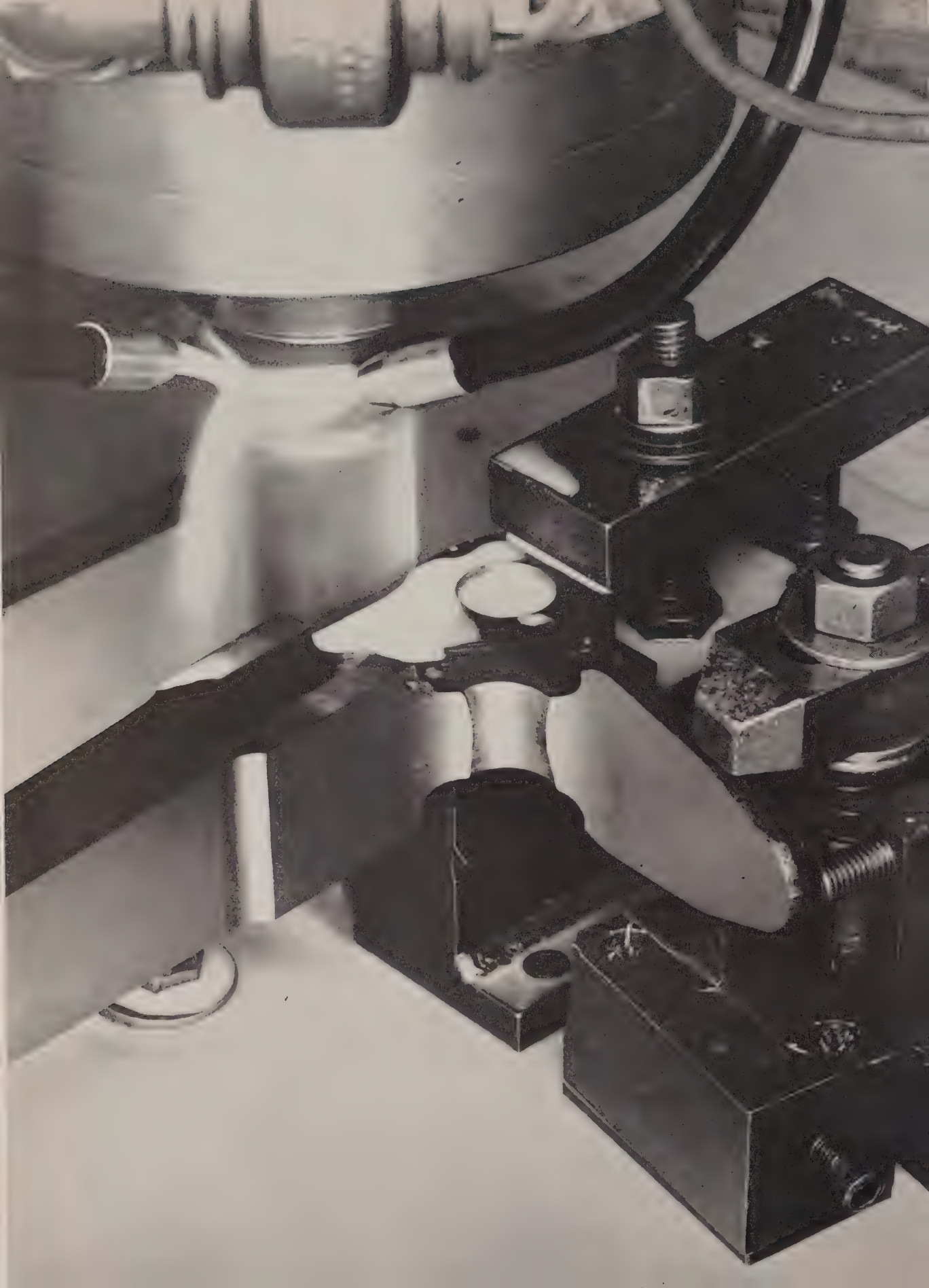
Take the first step toward better business controls. Have the Standard Register representative explain the remarkable new way to record total source data on one form, using the Stanrecorder.

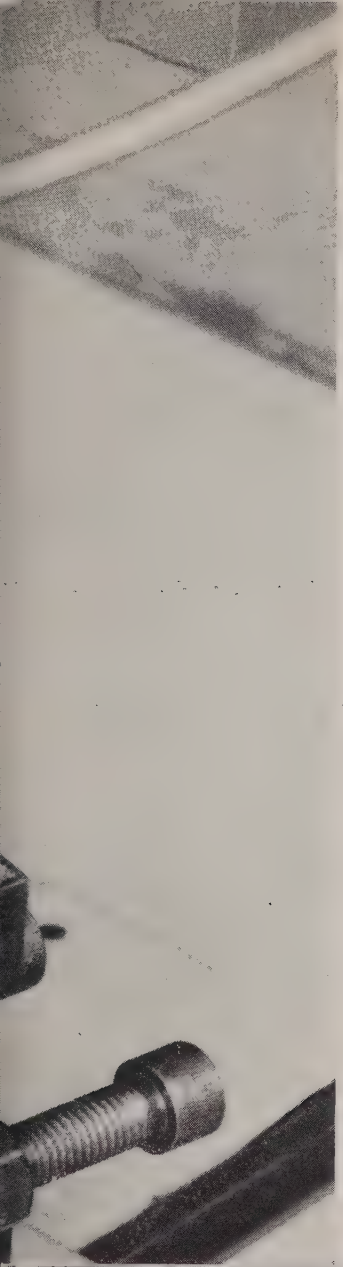
STANDARD REGISTER STANOMATIC SYSTEMS

Business Forms and Forms Handling Equipment for Paperwork Simplification

THE STANDARD REGISTER COMPANY, DAYTON 1, OHIO

For More Information Circle Reader Service Card No. 168





New Univac Numerical Control System saves Rohr Aircraft up to 66% on machining costs

Less than four years ago, Rohr Aircraft had only one numerically controlled machine tool. Today, Rohr has nine—with numerical control data prepared by a UNIVAC® Solid-State Computer.

Rohr programmers simply describe in mathematical terms the shapes they want machined on a specific machine tool and the UNIVAC Solid-State automatically generates the control instructions that will guide the tool. *Result:* Thousands of metal parts of varied complexity turned out perfectly—and *economically*.

An aluminum upper engine mount, for instance, under conventional machine tooling, used to show a heavy scrap rate. Under numerical control with the UNIVAC Solid-State Computer, the scrap rate is now *zero*.

In one case, a three-dimensionally defined part was produced under numerical control at 1/40th the cost under conventional machining.

Rohr's over-all savings are as much as three to one, a saving of up to 66% on machining costs!

Here's what H. C. Emerson, Rohr Manufacturing Engineering Manager, has to say about the UNIVAC Solid-State Computer: "We chose the UNIVAC Solid-State because of its high storage capacity, fast processing speeds, low costs, availability and versatility. It not only handles our corporate data processing, but its application to numerical control has been extremely successful."

Yes, what's important to all industrial executives is that Univac offers a low-cost, medium scale, general purpose system that not only has proved itself in over 300 commercial installations but, at no additional cost, can handle with ease highly diversified numerical control part programs. Interested? Our local representative will gladly brief you on Univac Numerical Control—for your own installation or through your nearest Univac Service Center.

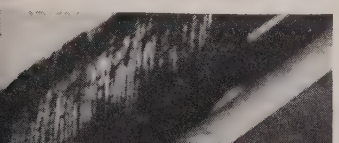
UNIVAC

DIVISION OF SPERRY RAND CORPORATION

UNIVAC Solid-State controls machining of three dimensional blowout door frame and engine mounting longerons.

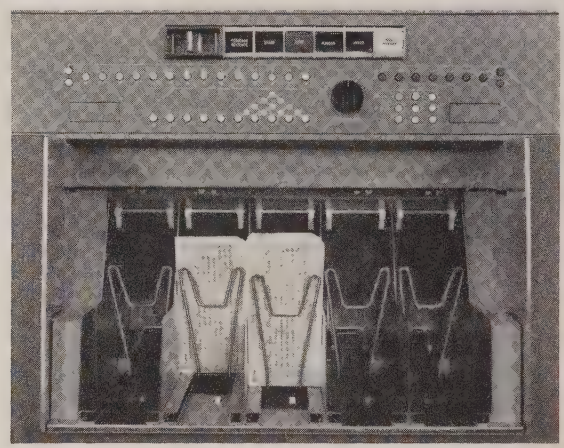
Engine mounting box-beam for aircraft, milled from structural steel with help of UNIVAC Solid-State Computer.

Vacuum chuck being milled from aluminum plate with UNIVAC Solid-State produced data.



Product Preview

First Transistorized Collator Features Core Storage



Transistorized IBM 188 collator (top) features a panel of display lights (above) for easy error-identification.

FIRST COLLATOR to be fully transistorized, the IBM 188 replaces relays with core storage and performs alphameric filing functions at the rate of 1,300 cards per minute.

Used for merging, matching, primary and secondary sequence checking, merging with selection, card selection and editing (double punch and blank detection) in any punched card installation requiring high speed, high volume collating, the IBM 188 has three standard sequence modes of comparison: (1) alphameric, (2) numeric with blank equal zero and (3) numeric with blank detected as an error. Modes can be controlled by panel wiring on a column-by-column basis.

Display lights register any errors, indicate the contents of storage and show the results of comparisons between cards, thereby reducing servicing problems. Control panel wiring is reduced 50 percent with a simplified panel. The use of transistors means that the memory function of the machine becomes electronic rather than electromechanical.

The collator's main feed hopper can hold 3,600 cards; the secondary hopper, 1,200 cards. Cards enter from each feed device at the rate of 650 cards per minute, providing card speeds up to 1,300 cards per minute when both hoppers are in use.

Models featuring any of three control positions are available: for 16, 22 and 28 card columns. Rental on the 16-position model is $575 per month; sales price, $30,750. Rental on the 28-position model runs $625 per month; selling price, $31,250. Delivery is 10 to 12 months after receipt of order.

The IBM 188 is being manufactured at the IBM factory in Rochester, Minn. Circle No. 130

secretary's desk?

No... a complete data processing system from Monroe for only $700 a month!

A fully transistorized, desk size, electronic computor, the new Monrobot XI is the least expensive complete data processing system yet devised. This is not a component. It is the entire system.

Data processing that every businessman can afford arrived with the advent of the Monrobot XI. For the large corporation, it allows decentralization . . . saves time . . . can be tied into large-scale systems. For medium and small sized businesses, its low price makes feasible—for the first time—the cost saving economies of automatic data processing. It is a particularly valuable piece of equipment for a service bureau.

No larger than a desk—requiring no special flooring or air conditioning—the Monrobot XI is unparalleled for efficiency and economy in doing general ledgers, profit and loss statements, subsidiary ledgers, cost accounting, and payroll.

For example, on a typical weekly payroll, it writes checks for eight-hundred employees in an eight-hour day, performing all operations automatically. With the addition of input-output devices that cost less than $200 a month, it prepares the payroll journal and employees earnings record—distributes costs to labor classifications—accumulates columnar totals by departments—sums columnar totals for the entire payroll run—and updates individual earnings records . . . *all in a one pass operation.* Yet it is no larger than a secretary's desk and can be used by any competent typist.

It substantially reduces processing time on almost any general business function . . . sales analysis, billing, inventory control, job costing, product scheduling, accounts payable—*you name it.* What's more it handles special jobs—everything from route accounting for bakeries, dairies, and the like, to stock and bond confirmations for brokerage houses—with unparalleled accuracy and economy. *It is the least expensive complete data processing system ever devised.*

At this low price—$700 a month to rent, $24,500 to buy—the Monrobot XI almost demands investigation. For information, write to: Electronic Computer Division, Monroe Calculating Machine Company, Orange, New Jersey.

MONROE

GENERAL OFFICES: ORANGE, NEW JERSEY • A DIVISION OF LITTON INDUSTRIES

For More Information Circle Reader Service Card No. 170

Product Preview

Sorter-Reader Will Handle Large Documents

At speeds up to 1,200 documents per minute, the G.E. sorter-reader will process papers up to letter-size.

A HIGH SPEED sorter-reader that will handle check- to letter-size documents has been introduced by the General Electric Computer Department.

Using magnetic ink character reading (MICR) techniques, the new 12-pocket machine will process documents up to 8-in. in length at the rate of 1,200 per minute—70 percent faster than previous G.E. document handlers, which operate at speeds up to 750 per minute. Magnetic ink characters printed at the bottom of a document are read at the rate of 240-in. or 1,900 numbers per second.

The E-13B type font, developed by General Electric and adopted by the American Bankers Assn. as the common machine language for automatic bank bookkeeping, comprises 10 Arabic numerals and four symbols. The font is both eye readable and machine readable.

Designed for on-line use with GE 210 or GE 225 computer systems or for independent off-line use, the new machine contains 40 to 50 percent fewer parts, thereby reducing maintenance.

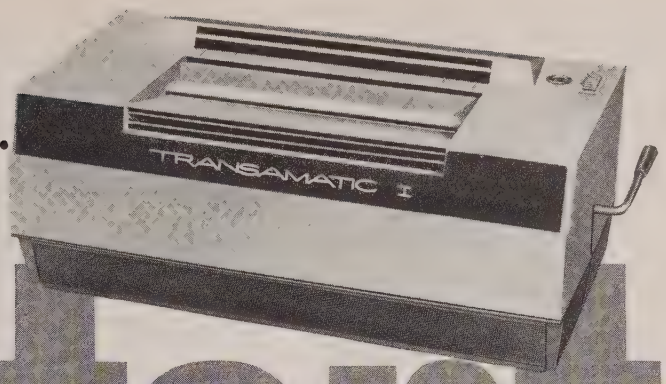
Sales price on the reader-sorter is $87,500; monthly rental, $1,750. The company promises 12 months' delivery.

Four years in development, the reader-sorter is the first in a new line of computer peripheral equipment, says General Electric. The company says the line will include faster and more efficient encoders and card readers, among other equipment.

Marketing of the document handler initially will be directed toward the bank market. As production increases, marketing efforts will be expanded to include such areas as utility billing, insurance processing and other markets where reading and sorting of huge amounts of paper presents a problem.

The new machine was introduced in Chicago at the recent three-day annual meeting of the National Assn. of Bank Auditors and Controllers (NABAC). Circle No. 131

Instant copies...



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You save from the start. For the Transamatic price is as compact as the machine itself. You keep right on saving, too. As your Transamatic polishes off each and every copy job in seconds. For pennies!

Nothing tight-fisted, though, about Transamatic performance. Reproduction is letter-perfect. Any ink. Any color. Whether typed, printed, drawn, stamped, written or mimeographed. Your Transamatic is precision-engineered for a career of dependable, trouble-free service.

Operation is simplicity itself. The No-Mix Cartridge snaps in, snaps out to end messy solution handling. Plugs in anywhere. And more. All, in fact, of the features and conveniences usually found only in machines costing twice to three times more. There are no accessories to buy either! The full story of this penny-pinching workhorse is yours for the asking. As is the free Manual on Office Efficiency suggesting hundreds of ways to cut paperwork and cost. Just mail the coupon. No obligation, of course.

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For More Information Circle Reader Service Card No. 171

Business Automation Showcase

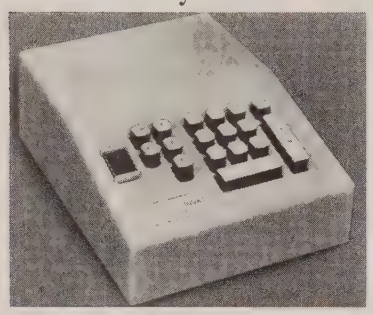
Machine-Indexed Folders

Fan-Folders are produced by Art Metal, Inc., in a continuous form, with punched margins for pin feeding, perforations for automatic bursting and scoring for automatic folding. Designed specifically for indexing by automatic data processing machines, the folders eliminate the cost and labor of buying, typing and pasting labels into pre-cut, pre-folded folders. Fan-Folders may be indexed at rates up to 200 per minute and are available in letter-size stock; in one-half cut, right position; and in straight cut. Special sizes and tab cuts also are available according to the customer's needs. Circle No. 113

Electronic Printer

Capable of producing over 3,000 words per minute, a new electronic teleprinter marks the entry of Motorola, Inc., into the electronic printer field. Developed for military use, the machine now is being readied for business and industrial applications. Capable of operating over cable, radio or telephone channels, it employs a "moving matrix" print head which eliminates heads at each character position. Basic system consists of a message buffer, translator and printer. Circle No. 133

Numeric Keyboard



The K-110 numeric keyboard is an addition to the Invac Corp. line of photoelectric encoding peripheral data processing devices. It will generate any standard or general five, six, seven or eight-bit binary code, eliminating encoding matrices, contacts and switches common to other keyboards. The unit features 10 numeric keys and five special function keys, plus keys for space, carriage return, tab and shift. A key interlock prevents the depression of more than one key at a time. Up to 15 special function keys can be added for particular applications. Normal and shift precedent codes also are available. The K-110, complete with amplifiers, sells for $325, can be delivered in 90 days. Circle No. 100

One-Step Proof Machine for Banks

The Class 450 proof machine by National Cash Register Co. is the first to use a replaceable program board to control the use of distribution totals, magnetic ink imprinting, computation of "float" and endorsement of checks. It also offers up to 40 totals of automatic sort. Adaptable to any size bank, the machine combines several separate banking operations as by-products of verifying customer deposits. Each transaction must be in balance or the machine will prevent further processing until entries balance. Consisting of a central console, a sorter-endorser and an individual listing tape printer for each classification total and document storage compartment, the machine comes in 24, 32 or 40-pocket sizes. Circle No. 132

SUBTRACT QUANTITY-SOLD FROM BALANCE-ON-HAND. IF BALANCE-ON-HAND IS NOT LESS THAN REORDER-LEVEL THEN GO TO BALANCE-OK ELSE COMPUTE QUANTITY-TO-BUY = TOTAL-SALES-3-MOS/3.

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06000	?	12048	12047	06096	'	12042	
06011	'	12040		06102	?	12017	12046
06017	?	12007	12043	06113	@	12013	12047
06028	@	12002	12047	06124	¤	12042	
06039	C	12047	12049	06130	?	12047	12022
06050	J	06068	U	06141	'	12043	
06057	A	12050	12046	06147	?	12012	12047
06068	¤	12040		06158	S	12022	12047
06074	?	12046	12012	06169	¤	12043	
06085	?	12048	12047	06175	?	12047	12027

YOU DESCRIBE YOUR PROBLEM USING THE COBOL LANGUAGE. YOUR COMPUTER THEN TRANSLATES THESE STATEMENTS USING A PROGRAM CALLED A PROCESSOR. THE COBOL PROCESSOR TAKES THE ENGLISH LANGUAGE COMMAND, PREPARES COMPLETE MACHINE LANGUAGE INSTRUCTIONS, AND GIVES YOU A READY-TO-RUN PROGRAM. NOW, YOUR PROGRAMMERS ARE FREE TO CONCENTRATE MORE PROFITABLY ON SOLUTIONS TO PROGRAMMING PROBLEMS THAT ARE UNIQUE TO YOUR COMPANY.

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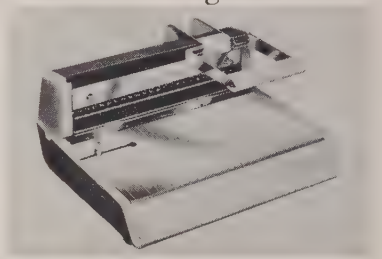
IBM®
DATA PROCESSING

Wire-Converting Kit

Jack-type control panel wires can be converted to self-contacting type through the use of a new kit produced by Tech Panel Co., Inc. Priced at $22, the kit includes a specially-designed crimping tool and 1,000 wire-tip sleeves. Circle No. 116

Plastic Binding Punch



Low-cost plastic binding is possible with the new, portable Speed-O-Print punch. Made of steel, the machine will accommodate sheets up to 12-in. long on the binding side. Accurate punching on half-inch centers fits all Speed-O-Print plastic binding cones. Circle No. 117

Convenience Copier

Weighing only 22-lb., the Transferon 12 convenience copier by Ozalid will handle material up to 12-in. in width. No warmup is needed and the machine will reproduce opaque or transparent originals, printed on one or both sides, regardless of color. A built-in, light-tight paper safe is featured in the gray and white, styrene unit. Measuring 22½ x 9½ x 12-in., the machine carries 32-oz. of pre-mixed developer in a slip-in cartridge that eliminates developer mixing or the oxidation of developer. Portable, the Transferon 12 has a retractable carrying handle. Circle No. 118

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IN MAIL & ORIGINAL DOCUMENT SORTING

Keytronic Sorts 160,000 Pieces of Mail in Five Days for $28.75 Per Week*

SIMPLE TO OPERATE

Keytronic operators use the touch system on control keyboards as on standard typewriters and 10 key adding machines. These are familiar to most employees; therefore, operation of the Keytronic sorters is a simple process and may be learned in a matter of hours.

Keytronic is four times faster than manual sorting methods!

*FIGURES BASED ON 8-HOUR DAY AND 10-YEAR DEPRECIATION.

Keytronic Sorters can be used wherever sorting must be done—in these industries among others:

Manufacturing, wholesaling, retailing, government (Federal, state and local—all agencies of the government where mail or document sorting is required), utilities, insurance, mail order houses, credit agencies, publishing, printing, investment firms, service organizations, libraries and trucking.

Here are a few of the many successful applications of Keytronic Sorters now being used:

Incoming and outgoing bulk rate mail, invoices, inventory control records, purchase orders, service orders, statements, shipping bills, bills of lading, tax forms, money orders, cash vouchers, credit & debit memos, subscription forms, and many, many more.

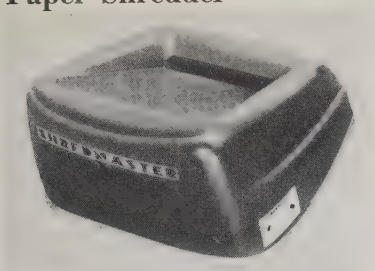
For more complete details write:

UNIVERSAL BUSINESS MACHINES

P. O. Box 5183 **Columbia, South Carolina**

For More Information Circle Reader Service Card No. 179

Paper Shredder



Shredmaster's Bantam 10 paper shredder is a small unit capable of handling 120-lb. of paper per hour. Powered by a ¼-hp motor, the machine shreds in quarter-inch strips, created by hardened alloy steel cutters or by knurled cutters. Mounted on soft rubber for noiseless operation, the unit comes in an office gray finish. Circle No. 112

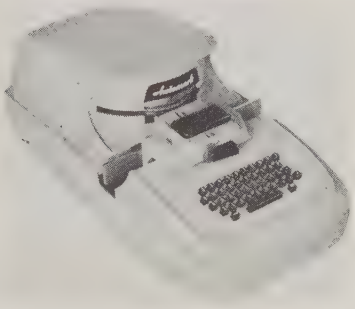
Bar Chart Recorder

A bar chart recorder that monitors and records the efficiency of utilization of up to 40 production or data processing machines is manufactured by Electronic Associates, Inc. Desk-top size, the unit operates remotely from production areas and is connected to machines by telephone-type wires. Cost and production control information is produced on a continuous bar chart, providing an accurate graphic picture of the machine's productive and non-productive effort. The recorder samples and records each machine's performance every 20 seconds; charts may be produced for 9, 17 or 24-hour periods. Information such as the operator number, job number or shift number also can be obtained from this machine. Circle No. 110

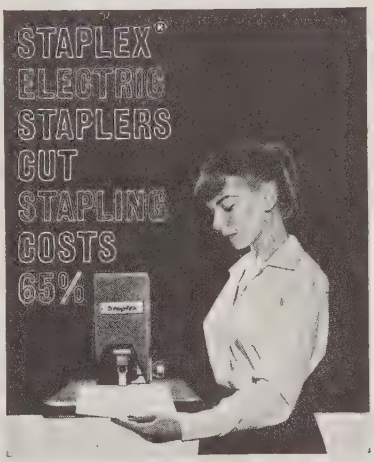
Two-Way Radio

Raytheon is manufacturing a citizens band two-way radio which operates from 115-volt AC or 6 or 12-volt DC power. The Ray-Tel 2 is a five-channel transmitter-receiver with a yoke mount that tilts to any convenient angle, permitting floor, shelf or under-the-dashboard installation. Ten tubes power the unit at full FCC limits of five watts input power. Measuring 9½x5x9¼-in., the Ray-Tel 2 has a 4-in. front-mounted speaker, an off-on light that indicates when the set is operating and a press-to-talk microphone. Suggested retail price is $189.95. Circle No. 115

Embossing Machine



An embossing machine for making address plates, courtesy card and credit cards, manufactured by Automark Business Machines Co., operates electrically from a keyboard at speeds of over 100 characters a minute. Standard features are an automatic line space, automatic carriage return, back space, rapid carriage traverse and quiet operation. Character sizes range from 3/32-in. to 3/16-in. Easily converted to punched card or punched tape control, the machine offers hand-operated chute-style plate feeders, special characters and character sizes, plate roller attachments and hand and automatic fed tipping machines for plastic plates as optional equipment. Circle No. 108



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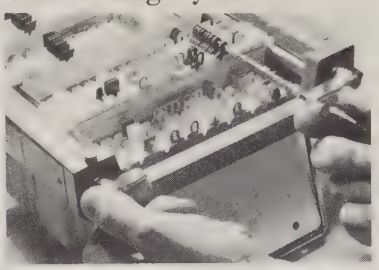
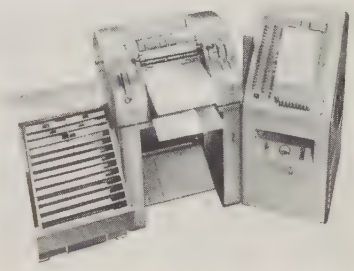
ATF

Card Filing System



The Practa Data-Card system is designed to satisfy those who have a record-keeping problem, but not of sufficient magnitude to warrant electronic data processing, such as stock item, customer account or purchase requisition records. Hanging from frames which accommodate 200, 400 or 600 cards, the Data-Cards come in three sizes. They are folded once and provided with cut-outs along the folded edge. Small signals with holes in them are inserted in the cut-outs. Visually by color (the signals come in 14 colors) or with a sorting needle, different card categories can quickly be sorted out. Circle No. 127

Line Selector

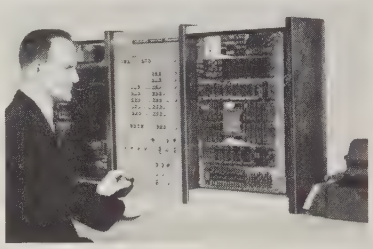


The Ormig electronic line selector by Copy-Craft, Inc., will select any number of lines or group of lines, in whatever combination desired, from instructions contained on a master. It then will reproduce them in condensed form on the run-offs, without the aid of masks, blockouts, strip masters or shingled forms. Up to six headings or line groups can be programmed for automatic selection. Especially designed for automatic handling of back orders, production control, order-invoicing, sales analysis, purchasing and similar operations, the selector control board has a push-button for each line on the master and a series of buttons to select headings. Circle No. 107

Tape Winder

A manually-operated, heavy-duty tape winder, the 5061 Tape-File, manufactured by Dresser Products, Inc., takes 7-in. and 9-in. removable face reels and winds at high speed. Height with a 9-in. reel (as shown) is 13-in.; base measures 5¼x7⅜-in. Circle No. 111

Desk-Size Computer



Univac Military Digital Trainer is a desk-size binary computer that occupies only 8-cu. ft. of space and operates on 60 cycle, 110v AC power, drawing a maximum of 750 watts of electrical power. Priced at $34,500, it has a high speed magnetic core memory with 512 15-bit words of random access storage. The unit has a complete console with all arithmetic and control registers available on the panel for operator intervention and for teaching operator procedures to trainees. The machine is ideal for training computer maintenance, design and programming. Input and output is via an automatic typewriter with paper tape reader and punch. Purchase includes a three-week training course at the customer's site; delivery guaranteed within six months of order date. Circle No. 128

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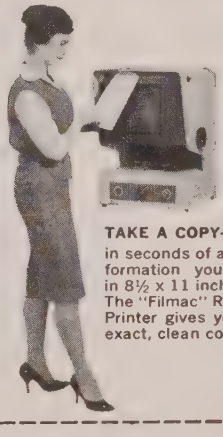
TAKE A LOOK— at the enlarged microfilmed information on the bright viewing screen of the THERMO-FAX "Filmac" Reader-Printer. Touch a button and...



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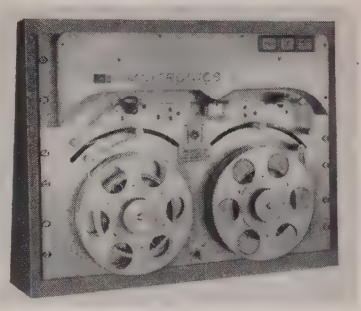
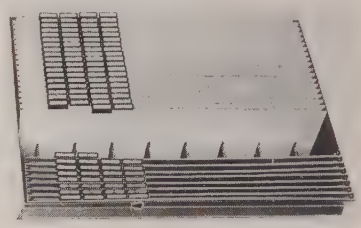
For More Information Circle Reader Service Card No. 178

Paper Tape Reeler



A bi-directional paper tape handler for tape speeds up to 40-in. per second has been added to the Omni-Data product line manufactured by Omnitronics, Inc., a subsidiary of Borg-Warner Corp. The Model RS-300 accommodates reels of five to eight inches, weighs 45-lb. and measures 19x10½x11¼-in., with a 2¼-in. front panel extension. Circle No. 104

Visible Filing System



The DFC/VFC filing system by Vue-Fax System Controls Corp. comprises a series of cabinets which store cards in a vertical position. Aluminum spacing panels assure maximum filing capacity and prevent sag. Movable index tabs are angled for full visibility. Each cabinet will hold up to 10,000 cards. Circle No. 114

Line Printer

The LP-12 high-speed line printer, manufactured for the Bendix Computer Div. by Anelex Corp., may be used directly with the central processor or accessory equipment in the G-20 computer system without requiring special buffering. A data source sends a line of 120 characters or less to the printer at a rate up to 67,000 characters per second, along with instructions for printing and paper feed. The LP-12 prints and advances paper independently at rates up to 800 lines per minute. Circle No. 109

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...how to make copies in minimum time (schedule sheets as well as forms).
...how to do away with retyping and rechecking.
...how to eliminate errors in transcription, and mistakes caused by misaligned carbons.
...how to hold down costs—1¢ a sheet, letter-size materials.

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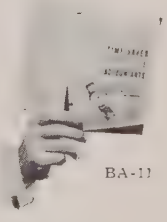
It's full of ideas—*saving* ideas—get your free copy now.



BA-11

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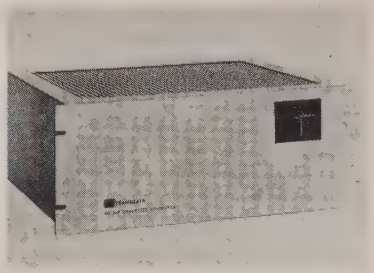
Company.....
Street.....
City..... County..... State.....

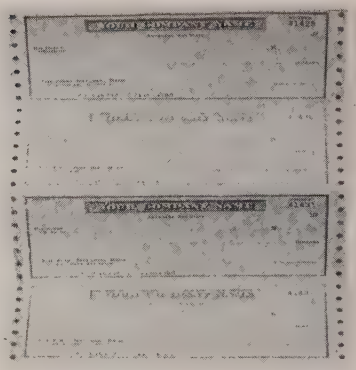
For More Information Circle Reader Service Card No. 169

Character Generator



Output of computers can be "printed" on the face of a cathode ray tube at speeds of about 100,000 characters per second with the TD-549 character generator by Transdata, Inc. Over a million words per minute can be shown in any "alphabetic" language. More than one TD-549 operating in parallel can provide an unlimited number of characters and multi-lingual output at no speed reduction. Flexibility of 64 plug-in characters and codes, special technical symbols and a wide variety of type fonts and sizes can be provided. Applications include surveillance displays, computer displays, and information retrieval systems. Circle No. 129

Encoded Bank Checks



American Bank Note Co. is printing continuous form checks with consecutive numbers in magnetic ink. By allowing automatic processing on sorter-reader equipment, checks so imprinted then may be returned to numerical order, resulting in faster, less costly check reconciliation. Circle No. 106

Addressing Machine

Dashew Business Machines, Inc., is making a transfer process addressing machine which imprints directly from 3x5-in. master file cards or punched cards. Manually-operated machines will address 3,500 pieces per hour and weigh 30-lb.; electric models, 5,400 pieces per hour, 60-lb. Prices begin at $425. The master file cards, or Dashamasters, will give 200 impressions. Black, purple or blue imprints will not smear or rub off the back of the file card. Master cards, which can be typewritten or hand-addressed, cost 2.7 cents each, prepared. Circle No. 105

Paper Tape Terminals

Paper tape terminals to transmit data over telephone lines at a rate of 1,000 words per minute are produced for the Dial-o-verter system by Digitronics Corp. The Model D507S transmitter and Model D507R receiver will handle five, six, seven or eight-level tape and offer initial line checking, photoelectric reading and synchronization and serializing features. Units send and receive at the rate of 100 characters per second. A signal light indicates when the units are not synchronized. Model D507S rents for $155 per month, including full maintenance; the Model D507R, $190. Circle No. 103

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MATCH YOUR INVENTORY TO INCOMING ORDERS . . . WITH A LOW-COST ROYAL McBEE SYSTEM TAILORED TO YOUR NEEDS.

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For More Information Circle Reader Service Card No. 181

Copies On Request

Tape Storage—The new Datacase cabinet for magnetic tape reel storage is described in a new full-color catalog from Steelcase, Inc. Circle No. 119

The New Clary—The capabilities, facilities, products and achievements of the Clary Corp. are described in a 24-page illustrated brochure. Circle No. 120

Pressure Sensitive Labels—A brochure, "Speed and Savings" describes practical applications of Pee Cee Tape & Label Co. marginally punched pressure sensitive labels for machine accounting. Circle No. 121

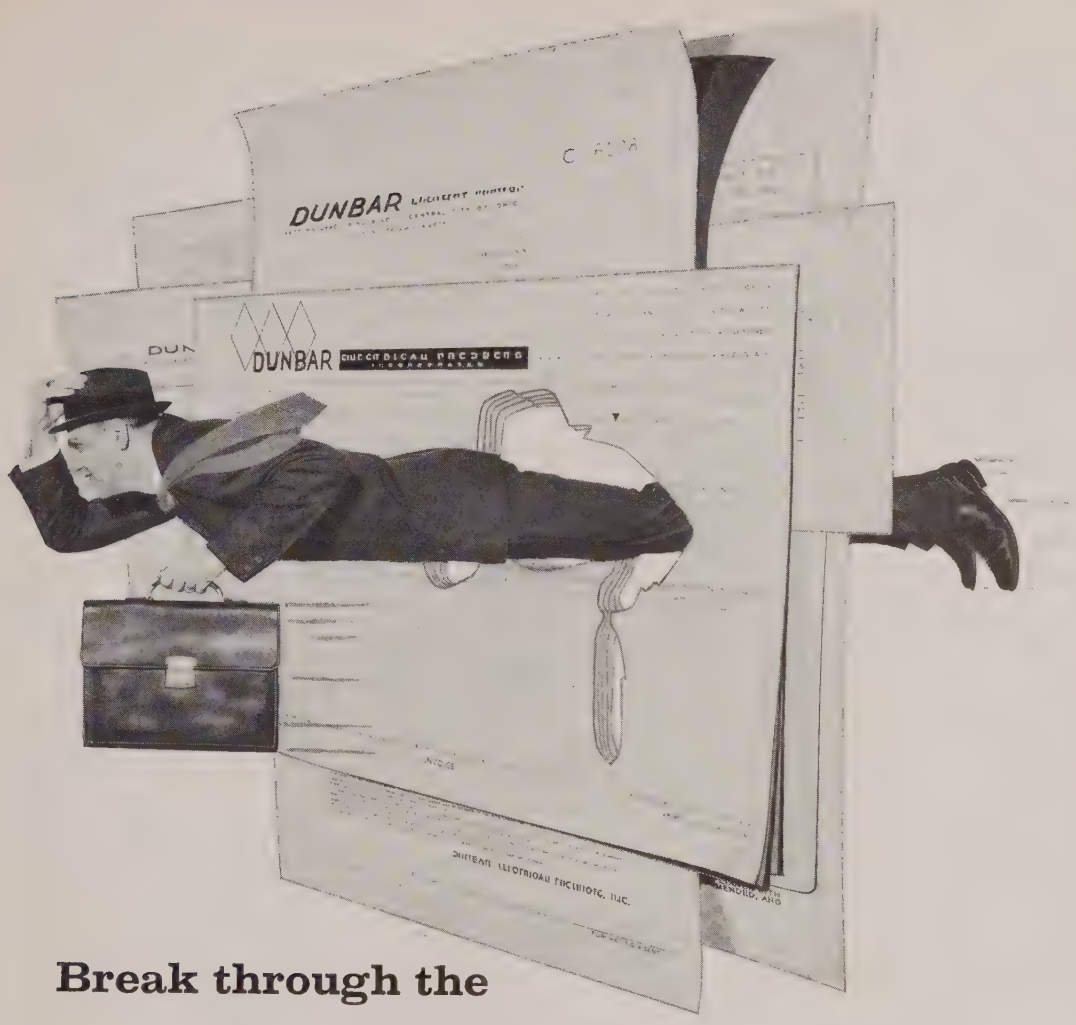
Indexing—"Indexing . . . vital to data processing" describes G. J. Aigner Co., specially-developed indexing products for data processing. Circle No. 126

Dictating Tips—Twenty hints for good dictation are published in a guide by the SoundScriber Corp. Circle No. 122

Microfilm Applications—Use of microfilm by three Federal agencies, the Social Security Administration, U. S. Bureau of Public Debt and the U. S. Army Finance Center, is described in separate booklets available from Minnesota Mining and Manufacturing Co. Circle No. 123

Data Recording System—An eight-page, four-color brochure describes Monitor Systems' Series 7000 modular digital data systems for alarm scanning and digital recording of virtually any type or combination of analog values. Discusses design features and applications. Circle No. 124

Computer Controlled IR—General Electric's 225 general purpose computer, now controlling an information storage and retrieval system at Western Reserve University, is described in a brochure. Circle No. 125



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For More Information Circle Reader Service Card No. 183

NEWS

New Computer Receives Final Check-Out

Robert S. Oelman, president of The National Cash Register Co., watches the first production model of the Class 390 desk-size computer get its final check-out. The general-purpose computer is said to be the first capable of reading conventional business documents.

Univac To Expand Service Centers

Univac, a division of Sperry Rand Corp., has announced its intention to expand its data processing service centers throughout the country.

Gordon Smith, vice president and director of marketing, says that the expansion will be accompanied by the formation of a national service center sales organization. He added that both operations will be instituted immediately.

The new sales and service structure will place 37 service centers in more than 30 major cities from coast to coast, Smith said. These will offer time, service and supplies to computer users.

Denver Bank Automates First Correspondent

The First National Bank of Golden, Colo., recently became the first correspondent bank in the country to utilize the check-processing facilities of a nearby larger bank.

Golden's $10 million bank delivers checks and deposits to the First National Bank of Denver at the end of each bank day. The Denver bank processes the paper, updates each account and prints out new records for the smaller bank during the night shift. All work is returned to the Golden bank by 8 a.m. the following morning.

Five other small correspondent banks will follow Golden's example in the near future.

New Tape Terminals Speed Government Data

Magnetic tape terminal units 3,000 times as fast as teletypewriter have been installed at San Francisco and Kansas City to speed the transmission and processing of Social Security data.

Information from San Francisco will be sent to the Government's RCA 501 computer in Kansas City, processed and relayed back in the same day. According to T. A. Smith, RCA executive vice president, this will permit the California office to enjoy the benefits of a full-scale EDP center 1,500 miles away.

Use of economical public carrier facilities (a private line telephone circuit) will limit the speed of transmission to 40 times that of a teletypewriter, but Smith points out that the new terminals will permit speeds up to more than 18,000 characters per second over existing public carrier facilities, whether telephone, leased line or microwave.

Honeywell To Equip Australian EDP Center

The Australian Department of Defence has contracted for the purchase of two large-scale Honeywell 800 electronic computers for installation in its EDP Proving and Training Center next summer. This will become the largest EDP center in the Commonwealth.

A. G. Townley, Australian Minister for Defence, said that the installation will be the first of four, designed to give the Department one of the largest centralized computer networks in the world.

During peacetime, Townley said, the EDP centers will handle the accounting and administration of an inventory of 500,000 stock items dispersed throughout Australia and overseas. This inventory is affected by 60,000 individual daily reports.

Honeywell has announced its intention of open an EDP sales office in Sydney "to assure the Department of Defence the best possible service and to seek new business in the Commonwealth."

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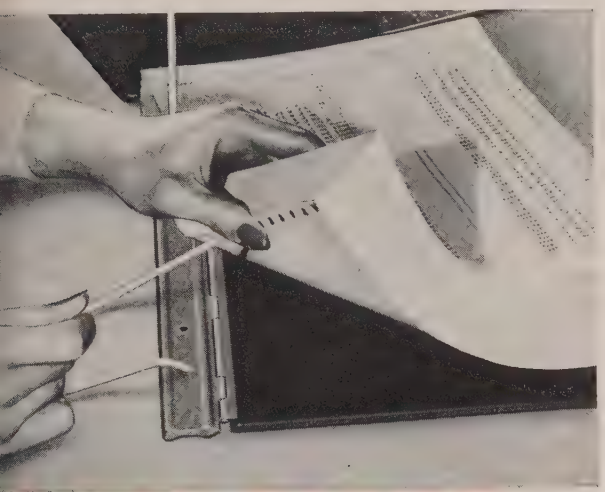
FOR BURST OR UNBURST TABULATING SHEETS



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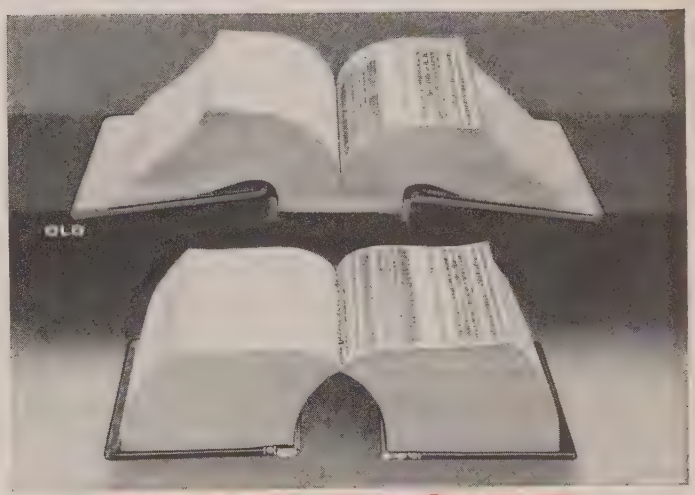
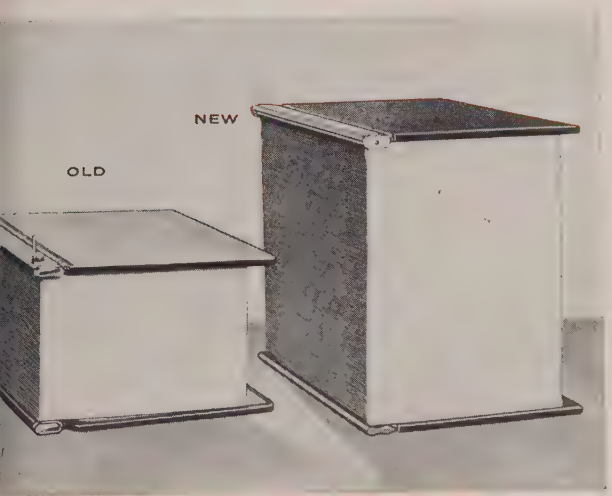


READ EASIER



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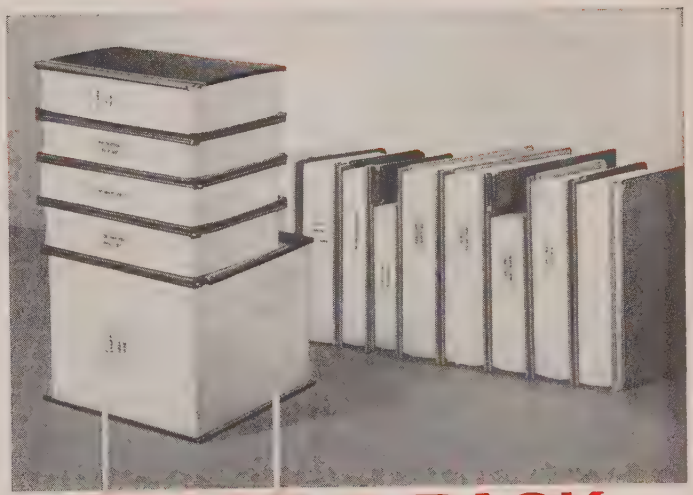
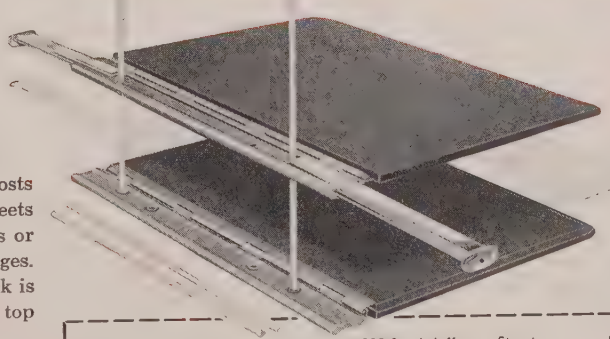


STACK & RACK



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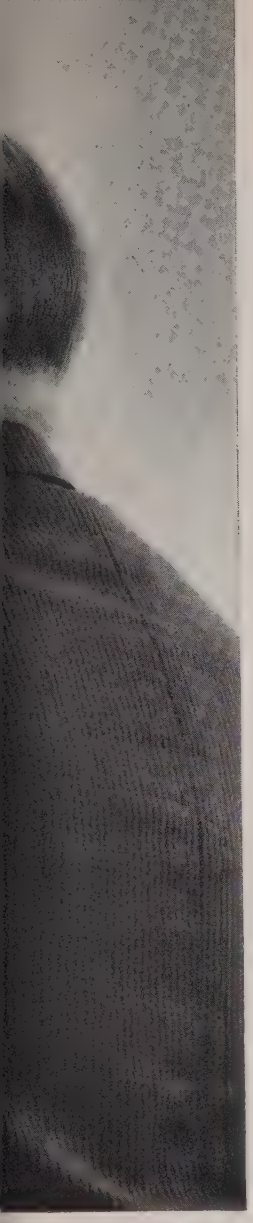
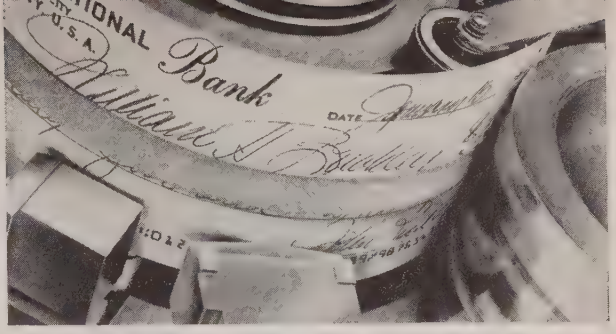


MICR IS FAST. This is the magnetic reading head of an IBM Reader-Sorter. Automatic check processing by banks means that your checks clear fast and that your cash accounting is timely.



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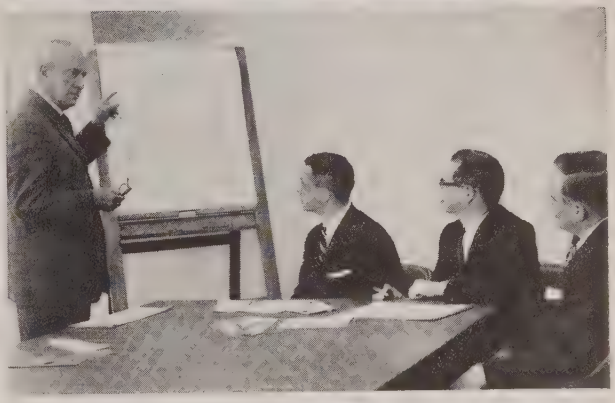

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Let IBM paper checks simplify your work...speed your check processing...improve your record accuracy. Let your IBM supplies specialist go to work for you. He has the facts you need to go MICR. Call your local IBM office and ask for your supplies specialist.

And the next time you are in the market for *any* IBM supplies, talk to the IBM supplies specialist. He's an expert backed by experts—a man who can show you how IBM supplies can help you improve the return on your data processing investment.

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DATA PROCESSING

Chicago Federal Reserve Bank Ends Test

The Federal Reserve Bank of Chicago, one of five studying the use of magnetic ink character recognition (MICR) equipment, recently completed its evaluation of the Burroughs B301 document processing system. The evaluation was based on a six-month pilot study (see BUSINESS AUTOMATION, Sept. 1961, p. 74).

According to preliminary reports, more than 30 million check passes were performed by the system without a single footing (addition) error. Detailed findings of the study now are being evaluated by the Stanford Research Institute.

At the Chicago bank, the pilot study was limited to check collection operations for 628 Illinois country banks, 93 percent of which are preprinting their checks with MICR numbers and symbols. These banks represent about 25 percent of the 2,900 banks in the five-state Seventh Federal Reserve District.

Named Man of the Year

Daniel C. Gillespie, director of data processing for Columbia Gas System, Columbus, Ohio, was named Systems Man of the Year at the recent International Systems Meeting in Cleveland.

Other regional nominees for the award were Richard W. Reynolds and Walter E. Rohde.

ISA Elects Officers

Philip A. Sprague, president of The Hays Corp., Michigan City, Ind., was elected president of the Instrument Society of America at a recent meeting held in conjunction with the organization's 16th annual Instrument-Automation Conference and Exhibit.

Named president-elect-secretary is Nathan Cohn, vice president of Leeds & Northrup Co., Philadelphia. Vice-presidents-elect are John R. Mahoney, superintendent, Union Carbide Nuclear Plant, Oak Ridge, Tenn., and Dr. Benjamin W. Thomas, director of Instrumentation Physics Research, Texas Butadiene & Chemical Corp., Baytown, Texas.

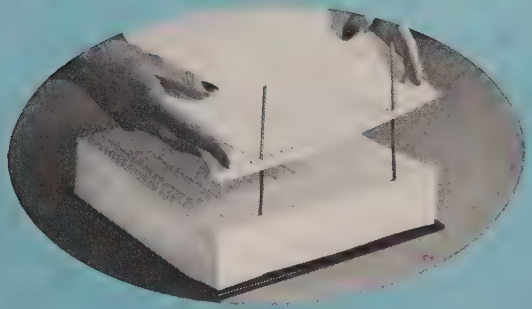
Form Service Company

Computer Supply Services, Inc., headed by Frederik H. Lutter, has been established in the Board of Trade Building, Chicago.

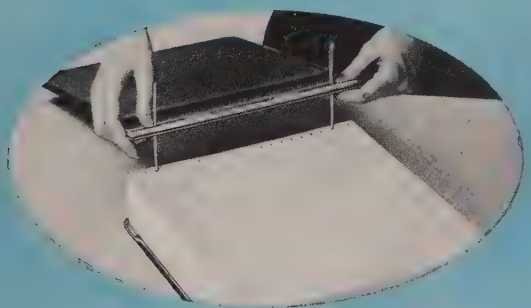
The new firm aims to (1) find a market for computer users' excess machine time; (2) provide magnetic tape, peripheral equipment and specialized supplies for computer installations; and (3) locate and market displaced data processing equipment.

I LEAD
TWO LIVES

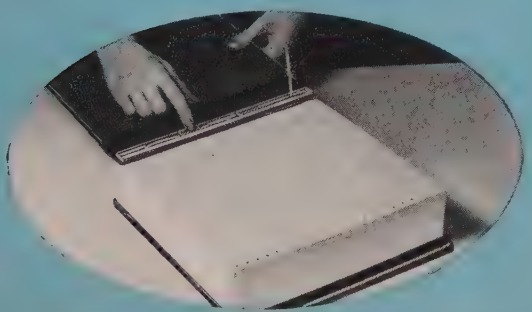
NBB CABLE POST CADET



Easy loading! Steel cable posts sealed in nylon stand upright.



Cover slips off for fast loading from top, unloading from bottom.



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Business Calendar

November 1-3 — 25th anniversary Industrial Engineering and Management Clinic, sponsored by the Industrial Management Society, will be held at Pick-Congress Hotel, Chicago.

November 5-8 — 30th annual conference, Controllers Institute of America, is scheduled for Palmer House, Chicago.

November 8-10 — 20th national meeting (10th annual and first joint national) of the Institute of Management Sciences, Operations Research Society of America, Jack Tar Hotel, San Francisco. Contact: ORSA, Mt. Royal and Guilford Aves., Baltimore 2, Md.

November 15-17—Execurama Business Exposition will be offered at Hollywood Paladium, Hollywood, Calif.

November 26-December 1—Annual winter meeting of the American Society of Mechanical Engineers, Statler Hilton Hotel, New York City.

December 2-5 — Four-day International Visual Communications Congress is scheduled for the Biltmore Hotel, Los Angeles. Contact: VCC, 18465 James Couzens Hwy., Detroit 35.

December 11-12 — Seminar conference on "Accounting Applications of EDP," sponsored by the National Assn. of Accountants, Hotel Penn-Sheraton, Pittsburgh. Contact: NAA, 505 Park Ave., New York 22.

December 12-14 — Eastern Joint Computer Conference, Sheraton-Park Hotel, Washington, D. C., follows the theme: "Computers—Key to Total Systems Control."

January 9-11 — 8th national Symposium on Reliability and Quality Control, will be held at Statler Hilton Hotel, Washington, D. C.

January 18-20—Subject conference on "Reports to Management" will be sponsored by the National Assn. of Accountants, Hotel Conrad Hilton, Chicago. Contact: NAA, 505 Park Ave., New York 22.

ADVERTISERS' INDEX—NOVEMBER, 1961

EDITORIAL

Ignorance In Action

Nothing is more frightening than ignorance in action, especially when Congressional action is involved. A case in point is the proposed legislation —the Manpower Development and Training Act of 1961—which resulted from the recent subcommittee hearings on Unemployment and the Impact of Automation (see page 20).

The manpower bill is but another step toward the socialist state. In recommending the bill, the subcommittee ignored many important facts relevant to the subject and relied instead on highly prejudiced testimony which, for the most part, voiced passionate pleas for Federal salvation from the "monster" of automation. The subcommittee quickly subscribed to the theory that automation was responsible for all of the various areas of unemployment that exist, despite the lack of any factual evidence to support the theory. Indeed, the facts of the matter tell quite a different story.

Dr. Seymour L. Wolfbein, Deputy Assistant Secretary of Labor and one of the Government's top authorities on employment and manpower, admits that it is impossible at any given time to tell how many unemployed are jobless because of a business cycle or because of technological developments. Regarding white collar workers specifically, Wolfbein has stated that automation will make many more employment opportunities available.

Another Bureau of Labor specialist, Jane L. Meredith, Division of Manpower and Employment Statistics, writing in the June 1961 MONTHLY LABOR REVIEW, states: "Business cycles have accounted for the major variations in long term unemployment throughout the postwar years." Miss Meredith emphasizes that the long-term unemployed are a "heterogenous" group whose problems require many different solutions.

According to Ewan Clague, Commissioner of Labor Statistics, this long term or "hard core" of unemployed totaled about 760,000 in September, under one percent of those who worked during the year.

The unemployment figure is further complicated by the 21 million workers who shift in and out of the labor force by their own decision during the year. The system used to arrive at the nation's unemployment total is itself subject to serious challenge. The figures are obtained by a sampling method which involves only 35,000 representative homes each month. A multiplication factor is applied to inflate the sample to a national figure. The part-time Census Bureau enumerators who conduct the poll use such a liberal method of classification that housewives and others who perform part-time services for pin money purposes are included in the unemployed category. Included also are those who have quit because of job dissatisfaction or out of desire to improve their economic status.

These are but a few of the facts ignored by the subcommittee in its rush to approve the administration's request for additional Federal controls over our economy. Is the next step "total" government intervention? This, of course, would solve the unemployment problem for all time—as it has in Russia. It may be later than we think.

Arnold E. Keller

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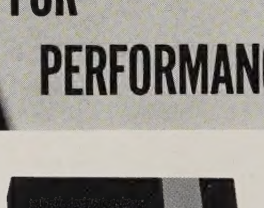

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